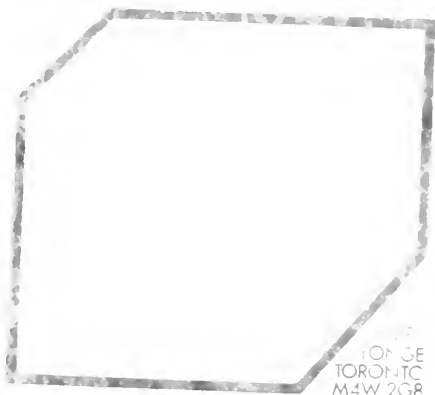




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THE
CANADIAN
HORTICULTURIST.

PUBLISHED BY

THE FRUIT GROWERS' ASSOCIATION
OF ONTARIO.

VOLUME VIII.

D. W. BEADLE, EDITOR,

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RIGNONIA RADICANS

THE Canadian Horticulturist.

VOL. VIII.]

JANUARY, 1885.

[No. 1.

THE TRUMPET FLOWER.

We call the attention of our readers to this beautiful climbing plant, not only for the purpose of assisting those who may be seeking for attractive plants to train over screens and lattice, but also to request those who have grown it to give our readers the results of their experience. More especially do we desire the experience of those who live in the colder parts of the Province, that we may be able to ascertain, if possible, the northern limits of its successful cultivation.

It will be noticed that the name given to it on the colored plate is *Bignonia radicans*. This was the name originally assigned to it, and by which it is yet very generally known. Later botanists have placed it in the genus *Tecoma*, and it is by them called *Tecoma radicans*. The plant belongs to the natural order of Bignoniads which furnishes probably the most gorgeous climbers in the world. By far the most of these are natives of tropical regions, and consequently cannot endure the rigors of our climate. Indeed, we believe that the species shown in the plate is the only one that has been grown successfully in Canada.

It is a native of North America, and is found growing wild from Pennsylvania to Illinois and southward. It is said to bear the climate perfectly as far northward as the Lake Superior region. We trust that our readers will enable us to verify this statement, for if this be so, it will be gratifying to know that a climber as showy and desirable as this, can be confidently planted over the greater part of this Province.

This species was introduced into England in the year 1640, where it is very generally cultivated. It continues in bloom for several weeks, is a very healthy and vigorous grower, requires no special care, being fully able when once established to take care of itself. It throws out rootlets from every joint, whereby it fastens itself to any support provided for it, and will soon cover any desired object. If it is preferred to train it in bush form, it can be allowed to fasten itself to a stake, and the shoots pinched in when they reach the top. This will cause it to throw out numerous branches, which will hang gracefully from the centre in every direction, and give in the flowering season a profusion of bloom.

THE WINTER MEETING

Of the Fruit Growers' Association of Ontario will be held in the City of London, on Wednesday and Thursday, the 28th and 29th of January, 1885, in Victoria Hall, Clarence Street. The opening Session will begin at 10 o'clock, a.m., on Wednesday.

Favorable arrangements have been made with the hotels. The Tecumseth House will accommodate any members attending the meeting at \$2 per day. The Grigg House at \$1 50 per day.

Delegates from the Michigan and New York State Horticultural Societies have signified their intention to be present.

The evening Session of Thursday will be devoted to short addresses on different subjects by delegates from abroad and members of the Association. Good music will be interspersed with good speeches.

Arrangements have been made with the leading Railways for the usual reduction of a fare and a third for the round trip.

Members will receive certificates entitling them to reduced fare on application to D. W. Beadle, Secretary, St. Catharines. The certificates must be presented to the railway agent when purchasing the ticket on going to the meeting.

Specimens of fruit in season at that time will be exhibited in connection with the meeting. Members are particularly requested to send samples of any new fruits they may have, and especially of any seedling fruits of value.

THE MARLBORO' RASPBERRY.

This new raspberry has been highly recommended as very valuable on account of the great vigor and fruitfulness of the plant, and the large size, bright color, firm texture, and very early ripening of the fruit. Its qualities are fully stated at page 196, vol. vii., of the *Canadian Horticulturist*. The plants are now offered for sale by those nurserymen who are so fortunate as to have them at *one dollar each*. We have made an arrangement with the *Rural New-Yorker* to present to all subscribers to both publications who prefer to pay *three dollars* instead of two dollars and sixty-five cents, as mentioned in the advertisement on the second page of the cover, *four plants* of the Marlboro' raspberry *free of cost* to the subscriber. Hence we announce that any person sending us three dollars will receive both the *Canadian Horticulturist* and the *Rural New-Yorker* during the year 1885, and all the free seed and plant distributions mentioned on the second page of cover, and four plants of the new Marlboro' raspberry, that could not be otherwise procured for less than four dollars. Those of our subscribers who have already sent us two dollars and sixty-five cents can avail themselves of this unparalleled offer by remitting to us the further sum of thirty-five cents. Were ever such advantages offered before? Two of the leading rural publications of the day, the Report of the Fruit-Growers' Association for the year 1884, the free seed and plant distribution of

both, and four plants of the Marlboro' raspberry that alone would cost four dollars; all this for ONLY THREE DOLLARS! Only think what this is really worth.

OUR PREMIUM PLANTS FOR 1885.

The Fruit Growers' Association will send by mail, post-paid, to every subscriber to the *Canadian Horticulturist* for the year 1885, your choice of any one of the five following articles, namely:—

A yearling tree of a Russian apple; or,
A yearling tree of the hardy Catalpa; or,
A yearling plant of Fay's Prolific Currant; or,

A tuber of a choice double Dahlia; or,
THREE papers of Flower seeds, one each of the Diadem Pink, Salpiglossis and Striped Petunia.

These will be securely packed and sent by mail in the spring to each subscriber, if he states which is desired. When no choice is indicated, none will be sent, it being understood that none is wanted.

TO OUR LADY READERS.

PREMIUMS FOR NEW SUBSCRIBERS.

For every new subscriber to the *Canadian Horticulturist*, accompanied with one dollar and thirty-seven cents, we will send not only the *Canadian Horticulturist* for 1885 and the Report of the Fruit Growers' Association of Ontario for 1884, now in press, and the premium chosen from among those offered by the *Horticulturist*, but also the "Floral World" for 1885, and sixteen packets of choice flower seeds. Remember that this offer is made only for new subscribers. The ladies have here an opportunity of

securing a collection of seeds of beautiful flowers, and a monthly magazine devoted to floriculture for the present year.

CLUBBING RATES.

<i>The Canadian Horticulturist</i> and <i>American Agriculturist</i> for 1885.....	\$2 00
<i>The Canadian Horticulturist</i> and <i>American Agriculturist</i> for 1885 and <i>American Agri- culturist</i> "Family Cyclopaedia" of 700 pages and over 1,000 illustrations, for.....	2 40
<i>The Canadian Horticulturist</i> and <i>Floral Cabinet</i> , with premiums of both magazines, for.....	1 80
<i>Canadian Horticulturist</i> and <i>Rural New Yorker</i> for 1885..	\$2 65
<i>Canadian Horticulturist</i> and <i>Grip</i> for 1885 (without pre- mium)	2 00

CANADIAN APPLES.

Messrs. Keeling and Hunt, of Pudding Lane, London, England, report that on the 12th and 13th of November, 1884, they sold 873 barrels of Canadian apples at public auction, with the following result: Greenings brought 14s. to 15s. 6d. sterling per barrel. Northern Spy, 14s. 6d. to 15s. Baldwin's, 15s. to 17s. Fameuse, 13s. 6d. Golden Russet, 21s. to 14s. Roxbury Russet, 14s. 6d. to 16s. Ben Davis, 12s. 6d. Pomme Grise, 17s. 6d. King of Tompkins, 18s. 6d. Ribston Pippin, 22s. to 22s. 6d. Montreal Fameuse, 16s. 6d.

They had for sale on 18th November, 1,516 barrels of Nova Scotia apples. These brought good prices. Greenings selling at 12s. 6d. King of Tompkins at 19s. 6d. Baldwin's at 14s. 6d. Ribston's at 22s. to 25s. 6d. Blenheim

Orange at 24s, and Gravenstein at 14s. sterling. Some No. 1. Extra Ribston Pippins, went as high as 28s. They report 2,052 more barrels of Nova Scotia apples to be sold on 25th November.

SCOTCH DICTIONARY.

The Editor acknowledges, with many thanks, the gracious gift of a Scotch Dictionary from Mr. John Croil. It is an old saw, that it is hard for old dogs to learn new tricks. He will study the dictionary with care, but fears that it is too late for him to acquire such a familiarity with this most beautiful language as to enable him to pass for a Scotchman. Thanks too, a thousand thanks, for the poems. Many of them are rich in beauty of thought and expression. We copy one for the benefit of our readers, who, though not Sons of Scotia, will not need the dictionary to appreciate its touching tenderness.

THE ROWAN TREE.*

Oh Rowan tree; oh Rowan tree, thou'lt aye be dear
to me;
Intwined thou art wi' mony ties o' hame and infancy,
Thy leaves were aye the first o' spring, thy flow'rs the
summer's pride;
There was na sic a bonnie tree in a' the countrie side,
How fair wert thou in summer time, wi' a' thy clusters
white,
How rich and gay thy autumn dress, wi' berries red
and bright;
On thy fair stem were mony names, which now nae
mair I see,
But they're engraven on my heart, forgot they ne'er
can be
We sat aneath thy spreading shade, the bairnies round
thee ran;
They pu'd thy bonnie berries red, and necklaces they
strang;
My mither, oh, I see her still; she smil'd our sports
to see,
Wi' little Jeanie on her lap, an' Jamie at her knee.
Oh, there arose my father's prayer, in holy evening's
calm,
How sweet was then my mother's voice, in the martyr's
psalm;
Now a' are gane; we meet nae mair aneath the Rowan
tree,
But hallowed thoughts around thee twine o' hame
and infancy.

* DICTIONARY.—Rowan tree, the Mountain Ash.

SMALL-FRUIT GROWERS' ASSOCIATION.

The annual meeting of the Small-Fruit Growers' Association of the Counties of Oxford and Brant will be held at Burford Village, County of Brant, on January 16th, 1885. All who are interested in fruit growing are invited to attend and take part in the discussion.

NEW MEAT CHOPPER.

Having used the meat chopper made by the Enterprise Manufacturing Company of Philadelphia, Penn., whose advertisement appeared in the December number, we take the liberty of calling the attention of those of our readers who have occasion to chop meat of any kind to this chopper. It is just complete in every respect, doing its work to perfection, simple in construction, easily kept clean, and a great saver of labor.

THE AMERICAN GARDEN.

It will interest all fruit, flower and vegetable growers to learn that the *American Garden* of New York has been sold to E. H. Libby, the well-known agricultural journalist. Established in 1872 as a quarterly, the *American Garden* has become a handsome monthly magazine, and a leader among horticultural publications. Under its new management it is an independent, illustrated, beautifully printed magazine, still ably edited by Dr. F. M. Hexamer and numbering as contributors many of the most successful fruit growers and gardeners in this and other countries. The coming volume will be greatly improved in many ways, and worthy of the earnest and hearty support of all who love fruits, flowers and nice gardens, and all who make a business of their culture. The price is only \$1 a year, including some choice

seed and plant premiums. Published in New York and Greenfield, Mass.

WHAT THE PEOPLE SAY.

I think the *Horticulturist* Report and Premium big value for the money.

SAMUEL H. KERFOOT.

Minesing, December, 1884.

I like the *Horticulturist*, and a little more floral culture, as it would make it more interesting for the young people.

THOMAS GORDON.

Bobeyageon, Dec., 1884.

[Thanks for this suggestion. Will endeavor to meet the wishes of the young people. We are always very glad to receive suggestions from our readers that shall help us to make the *Horticulturist* more acceptable.]

Most of the plants received from the Fruit Growers' Association are doing well; and I think the paper improving all the time, and enjoy it very much.

GEO. E. FISHER.

Freeman, Dec., 1884.

There is a great deal of useful information in the *Canadian Horticulturist* for any one who grows fruit for pleasure or for profit.

W. BROCKIE.

Pinkerton, Dec., 1884.

MR. EDITOR,—I am much pleased with the *Horticulturist*. It encourages us to grow an abundance of fruits, flowers, vegetables, ornamental trees and shrubs, tells us the varieties adapted to our locality, and shows us the *modus operandi*. All of us need the *Horticulturist*.

W. S. FORBES.

Ancaster, Dec. 15th, 1884.

QUESTION DRAWER.

Will you or some of your readers give us a plain article on the management of grape vines? It would be a great benefit to new beginners like myself. In summer pruning we cut within two buds of the fruit. What are we to do with the growth that has no fruit? Shall we cut these close to the old vine, or let them grow? Of all the articles that I have seen on grape culture, I have not yet seen one that my thick head could work from.

Also, could you give us an article on budding and grafting? My good friend, A. McD. Allan, was to come and bud for me last August; but unfortunately for me, and more so for him, he was taken ill about the time he was to come, so I got none done.

A. C. McDONALD.

REPLY.—Perhaps the short article by Matthew Crawford in this number will help you. We advise you to read *Beadle's Canadian Fruit, Flower and Kitchen Gardener*, which treats of budding, grafting and pruning the grape, with illustrations showing the whole process.

FAMEUSE—SNOW APPLE.

At page 70 of the *Canadian Fruit, Flower and Kitchen Gardener*, I find, "Fameuse—Pomme de Neige—Snow Apple"—from which I inferred that it was three names for the same tree; but I have been informed by dealers in Ottawa that it is not so; that the Snow Apple can be grown in that vicinity, and that the Fameuse cannot.

W. P. T.

REPLY.—If you will look at the "Fruits and Fruit Trees of America," by A. J. Downing, revised and cor-

rected by Charles Downing, the acknowledged American authority, you will find that he also says that Fameuse, Snow and Pomme de Neige are three names for one and the same apple. Which will you believe, our leading pomologists or dealers in Ottawa?

MR. EDITOR.—I have before me a Liverpool wholesale fruit dealer's price-list, 1882, and I find that the apples that fetch most money are Newton Pippins, quoted at 37s. per barrel, whereas finest New York Baldwins are down at 22s. per barrel. Will you kindly describe the former apple and its keeping qualities, and if fall or winter; and is the tree hardy and suitable to plant in our township?

I can only find a casual reference to it in "Beadle on Gardening," etc.

I have heard and read a good deal about Wealthy and Walbridge apples. Are they in any way superior to the well tried Baldwins for this county?

Yours truly,
POSANQUET.

REPLY.—The Newton Pippin does not grow to perfection in Ontario, or even away from the Hudson River. It is a winter apple. The Wealthy and Walbridge are more hardy than Baldwin, and on that account better for cold sections where Baldwin fails.

SULPHUR FUMES FOR CURCULIO.—Johnston Eaton, of Pennsylvania, writes of his experience with plum trees:—For nearly twenty years I had plum trees on the farm, but not a plum to eat, when a lady told me to smoke the trees when the fruit was set, and continue for two months, once a week, with sulphur. This I did, and have had an abundance of fruit ever since. Sometimes put a little coal tar in a pan with the sulphur.—*Fruit Recorder*.

CORRESPONDENCE.

SOME OF THE NEW STRAWBERRIES.

MR. EDITOR,—At the fall meeting of the F. G. A., held in Barrie on the 1st and 2nd October, I suggested as a subject for discussion, "The most desirable new varieties of Strawberries, and their particular merits;" and my reason for doing so was because the past winter and summer have been so exceedingly trying to that plant, that a better opportunity is not likely to occur for testing their power of resisting both frost and drought. I know not how it may have been in other parts, but as regards this locality a more destructive winter, or rather spring, and a more disastrous drought than the one that visited us last June, have never occurred in my experience here or elsewhere; and should I live to attain the age of one hundred years I should never again expect to see the strawberry growers afflicted with two such calamities in one year. More than one-half of my previous spring's plantation were killed as dead as a door-nail immediately after the snow melted in the spring, and those left living were so weakened that they did not set more than half a crop; and they had no sooner recovered from the effects of the frost as far as possible, and had prepared to ripen the few berries that had been formed, than the heat and drought of June wilted the plants and dried up the fruit, till the prospects of a profitable yield and the spirits of the cultivator went down to zero. Surely then such a season as this was favorable for testing the hardiness of any new varieties, and of such I had seven kinds that were at least new to me, viz., Bidwell, Finch's Prolific, Mt. Vernon, Arnold's Pride, James Vick, Manchester, and Jersey Queen. Of these, the Bidwell, Finch, Arnold and Vick were badly winter killed, the two last so badly that I only got two

berries from the two lots, and those were Arnold. Vernon came through the winter all right, but I regard it as worthless, and I may say the same of Bidwell as far as I can judge from a first crop. One or two only of the Finch plants proved very prolific. The few of Arnold and James Vick that were left have been trying to make up their losses, and have sent out a splendid lot of new plants. Manchester and Jersey Queen came through the winter ahead of all other varieties, new or old. The Jersey Queen had sent out the most runners, and looked the brightest after the snow was gone. In regard to the yield of fruit, Manchester and Queen are the only ones that need be mentioned, and these I watched with considerable interest as the fruiting season approached. Manchester made a good show of fruit stalks and blossoms, which in due course developed into a fine show of fruit. Jersey Queen was later, and did not make as good a display. When Manchester was at its best it was a splendid sight to look at, every plant appearing to have five or six fine berries in different stages of ripeness, and it was at once pronounced an acquisition, and worthy of cultivation on a larger scale. Jersey Queen was later, and did not look so promising as to receive an immediate endorsement, but was voted worthy of further trial. When the Manchesters were nearly done the Jersey Queen began to show up a little better, and produced some splendid berries, but its habit is quite different to the other, in that you scarcely see the fruit till you look for it under the leaves, whereas the Manchester holds its berries up to the gaze of every passer-by. Comparison, therefore, of the two by appearances is very deceptive. As compared with the Wilson, the Manchester commences ripening later and is done earlier; therefore at a certain period it shows to

better advantage, and gives rise to expectations that are not quite realized by the number of baskets picked. On the contrary, the Jersey Queen yields more baskets than its appearance would lead one to expect. It commences perhaps three days after Manchester, but it holds out a week after Wilson, and continues all the time slowly but surely bringing its berries to perfection—and such berries! They are as much ahead of the Manchester as the Manchester is of the Wilson, and neither of the two produce anything like the same proportion of small berries. The fine berries of the Jersey Queen soon fill up a basket; and although there did not appear to be so many of them as of the Manchester, they continued, in spite of the drought, in furnishing fine berries for repeated pickings, till from a row three yards shorter than that of its rival we had picked one basket the most. This was certainly unexpected. I am satisfied that I could not have selected in any part of my field a section of a row of Wilsons of the same length as the rows of those two kinds, and planted at the same time, that yielded as much fruit. But it must be recollected that the Wilsons had suffered very much the worst by the spring frosts, therefore the comparison another year might be quite different. As these two varieties escaped the frost better than the Wilson, so also they appeared to suffer less from the drought. All these new varieties were planted on sandy soil.

Now as regards the keeping and shipping qualities of these two varieties, or I might say of the Jersey Queen only, for of the other I took no notice; but happening to put a basket of the former in a case I was sending to a friend, that had to travel on two lines of railroad and lie over for several hours at a station because trains did not connect, I was surprised to learn

that when they reached their destination they appeared as fresh as though they had just been put in the case. I was surprised because they had not the appearance of a firm berry; in fact they are very easily bruised, and I should have called them rather soft; but I did not then know that the hardest or firmest berries are not always the best keepers; but I know it now. I know that the Wilson twenty-four hours after picking has lost both appearance and flavor, and that the Jersey Queen, in the same time, has suffered no perceptible change in either respect. I know that the latter can be kept three or four days without losing its gloss, although if left in a box that length of time the lower half of the berries will get mouldy; and it is quite remarkable that though it is not possible to handle them without in some cases breaking through the glossy varnish that covers them, the bruised spots do not appear to discolor, though they would of course more quickly get mouldy. This is certainly a remarkable quality for any berry to possess, and I shall look with considerable interest to its behavior another season. At present my Jerseys certainly are the finest row in the field.

Yours, &c.,

Barrie, 15th Dec., 1884.

A. HOOD.

TO PREVENT THE GRASS FROM GROWING AROUND TREES.

DEAR SIR,—You ask for the experience of subscribers. Mine is not worth much, as I am a novice at the business. I have only a small garden and orchard, probably about two hundred trees, and about one hundred and fifty gooseberries and currants together, and fifty-five grape vines. I have tried an experiment this summer: it may be of benefit to some of your readers, if it is beneficial to trees to

have no grass growing around them. The experiment is this: I sawed a piece off from the end of a log twenty to twenty-four inches in diameter, and an inch and a half or two inches thick, then split it through the centre and made a hole to fit the trunk of the tree, and then closed the two pieces together, leaving them on the ground around the trunk of the tree. This will entirely kill all grass and weeds around the tree.

Yours truly,

A. C. McDONALD.

Dunlop, Nov. 19th, 1884.

SUMMER WEATHER.

Fruit growers are more interested in the climate of any given locality than are most other cultivators of the soil in that locality, as with the fruit growers, especially the growers of the more tender varieties, such as grapes, tomatoes, strawberries, &c., the lowering of the temperature two or three degrees below the freezing point at a time when such a decline is unusual, or at any unusual period, often makes all the difference between financial success and failure, while the ordinary farm crop might not be seriously affected. A case of this kind occurred in this locality on the 30th of May last, when we had our last spring frost (two weeks later than it has occurred for many years previously). It did not seriously injure farm crops, but very materially injured the fruit crop generally, and caused nearly a total failure of the grape, pear and strawberry crop.

Believing that a record of some of the leading features of the climatic conditions prevalent in this locality during the past five years may be of interest to your readers in this neighborhood, and also be of service to such other persons who may desire to compare the peculiarities of the climate in their several localities with that of this place,

I subjoin the following table. All the data given refer only to the seasons from the 1st May to 31st October for the last five years, viz., from 1880 to 1884, inclusive:—

Summer.	Mean temperature.	More or less than average.	Highest temperature of each summer.	More or less than average.	DATE.	Month.	Day.	Lowest temperature of each summer.	More or less than average.	DATE.	Month.	Day.	Mean temperature.	Warmest month.	Mean temperature.	More or less than average.	DATE OF LAST SPRING FROST.	Month.	Day.	Lowest temperature.
1880	58.97	+ .63	91.7	- 1.06	July	24	17.4	- 1.2	October	24	79.63	+ .13	9 July.	66.58	+ .16	May	15	31.4	15	31.4
1881	60.80	+ 2.46	100.7	+ 1.94	Aug.	30	20.3	+ 1.7	Sept.	25	85.30	+ 5.70	6 July.	69.63	+ 2.61	May	5	30.2	5	30.2
1882	58.26	- .08	91.3	- 1.46	July	26	20.1	+ 1.5	Aug.	20	75.30	- 4.2	6 Aug.	67.06	+ .64	May	16	27.3	16	27.3
1883	54.81	- 3.63	85.2	- 7.56	Aug.	22	18.4	- 2	Aug.	17	74.90	- 4.6	18 July.	63.32	- 3.1	May	17	26.5	17	26.5
1884	58.85	+ .51	94.9	+ 2.11	Aug.	28	16.8	- 1.8	Aug.	26	82.45	+ 2.95	29 June.	63.13	- .29	May	30	27.4	30	27.4
Average	58.34	..	92.76	..	..	..	..	..	..	..	79.5	..	..	66.42	..	..	..	..	..	..

From the foregoing it may be seen that the summer of 1881, judging from the temperature throughout, should

have been the most favorable fruit season of the period referred to, and that 1883 should have been the least favorable. It will also be noticed that the summer of 1884 was in every important feature a little above the average, excepting the last spring frost, which was very severe, and about two weeks later than usual. This frost was pretty general, and was undoubtedly the principal cause of the partial failure of the fruit crop in so many localities.

The summer seasons of 1881 and 1883 were dissimilar in almost every respect. The highest temperature recorded during the whole period was on the 30th August, 1881. The summer having the highest mean temperature was 1881. The lowest temperature recorded for the summer of 1881 was above that of either of the others. The warmest day of the whole period, September 6th, and the warmest month, July, were both in 1881, while the temperatures of all the corresponding data and events for the year 1883 were lower than for either of the other summers.

It is also on record that the average summer rain-fall for the five seasons referred to was 17.34 inches. In 1881 only 16.44 inches fell, or .90 inches less than the average. In 1883 there fell 22.35 inches, or an excess of 5.01 inches. The average number of days on which rain fell for each season was 69.6. In 1881 rain fell on 70 days, and in 1883 on 85 days. Neither the extra number of days on which rain falls, nor the extra quantity deposited during the season, seems of itself to have much influence in providing a fruitful season. In the summer of 1882 rain fell on only 57 days, and the total deposit was only 14.81 inches, or 2.53 inches less than the average, and yet, although noted for having fewer rainy days and a considerably less rain-fall than either of the other seasons, it was a fairly

good season for fruit in this neighborhood. J. B

Lindsay, December, 1884.

FRUIT AT BRUSSELS.

DEAR SIR,—The arrival of the December number of the *Canadian Horticulturist* reminds me that it is about time to renew my subscription, and also to report to you about the premiums you have sent me, and a little of my experience in fruit culture.

And first let me say that I prize the magazine very much, and always look for it with interest, and would be glad if it were larger. I think it would be well if the members of the Association would write more for it.

The Niagara Raspberry sent me in the spring of '83 grew nicely; but in the winter it froze nearly to the ground, so there was but one small branch that had a few berries on. The fruit appeared very well. Last spring I set out the young plants growing from the roots, about thirty of them, and they, with the first bush, have grown well through the summer, and I hope, if they do not freeze down again, to have some more fruit next season.

The Worden Grape, sent at the same time, grew middling, but was frozen to the ground, as were most other young grapes, in the early fall. This spring it started to grow again, and when the growth was about two inches long it was killed off again by frost. It grew a second time, and made about 18 inches of vine.

The Prentiss Grape, sent last spring, grew, making about one foot of vine. I have my doubts whether grapes will succeed in this part. I have several, and the best growing one has only made about four feet of vine in two summers.

I had two kinds of Black Cap Raspberry fruit this season, the Mammoth Cluster and Gregg. They fruited fairly

well. The Mammoth Cluster stood the winter best, it not being hurt much. The canes of the Gregg were hurt considerably by the winter frost.

I have also several kinds of strawberries. The Sharpless does very well. The Bidwell is a good grower, and forms a good plant, but I am disappointed in the fruit, there being not much of it and very imperfect.

I am trying several kinds of currants and gooseberries. The trees are young, not much fruit yet, but it is good.

I am but beginning small fruit raising, but am finding a growing interest in it, and purpose, if spared, to report as I find interesting and profitable matter.

Yours truly,

SAMUEL FEAR.

Brussels, Dec. 10th, 1884.

MUSIC FOR THE WINTER MEETING.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

DEAR SIR,—How fast the months go by, so say you, and so, methinks, do all of your readers who, like you and me, have passed the sixtieth mile stone.

Your retrospect of the past in connection with our journal is a pleasant one. Many a compliment you have been paid, many an encouragement given, to persevere in a good work, though at times with wearisomeness and worry.

Surely the *Horticulturist* has been a good investment to many a one. It seems to me scarcely can that reader be a *man aca* who has not profited by its perusal. But I find myself wandering into my mother tongue, and think I hear you saying, "There goes Croil again in his broad Scotch; he has never yet sent me his promised Scotch Dictionary."

But I am in earnest to-day, and send you herewith a nice volume of Scottish

songs, at the end of which you will find a miniature Scottish Dictionary. Small though it is, *well studied* there is enough in it to pass you for a fair sample of a Scotchman. But what of songs, you say? I'll tell you about that too. A new feature promised at our next meeting is good music. I go for that, and so well have you reminded us of passing years you must be just in mood to give us in all its beauty,

"John Anderson, my Jo."

Friend Goldie will surely enliven us with "The Dusty Miller." I only give you the concluding verse:

"In winter when the wind and rain
Blaws o'er the hoose and byre,
He sits beside a clean hearth stane,
Before a rousing fire;
With nut-brown ale he tells his tale,
Which rows him o'er fu' nappy.
Who'd be a king—a petty thing,
When a miller lives so happy?"

Mrs. Saunders, I hope, will favor us with the song, the most beautiful in the Scottish or any other language:

"There's nae luck about the hoose."

And before she gets through with it, her worthy husband, *I know he's full of music*, will be so worked up with the music of the good old land as to lead off in lively style in

"Auld lang syne,"

Scott Act notwithstanding.

Wishing you and your readers a happy New Year, and many returning ones,

Dear Sir, yours truly,

JOHN CROIL.

THE NIAGARA RASPBERRY.

The Niagara Raspberry (received from the Fruit Growers' Association) did very well this summer. It had quite a lot of berries, and very large. I think it will do well.

EDWARD RYERSE.

Port Dover, Dec., 1884.

REPORT OF FRUIT TREES RECEIVED FROM THE ASSOCIATION.

The Flemish Beauty Pear sent out by the Fruit Growers' Association some years ago has blighted badly this summer, but had a heavy crop of fruit, bearing about four or five bushels. The Glass' Seedling plum, also sent out, is about the only plum tree which stood the blight last year out of three hundred, and had a very fair crop this season. The Swayzie Pomme Grise apple has fruited the last two years, but not very well. The Ontario apple had twenty-five large apples the next season after planting, which proved to be good keepers for so young a tree. My raspberries and grapes proved a total failure.

WM. ROSS.

Owen Sound, December, 1884.

THE NIAGARA GRAPE.

In reading your article on the Niagara Grape, I notice that you are under the impression that the vines of that variety planted in Canada are mainly in the neighborhood of Grimsby. I doubt if that is the case, as I think Oakville comes to the front in the Niagara Grape as well as in strawberries. I think there are about four thousand vines of Niagara planted in this vicinity. I have two thousand five hundred of them, and if you want to see some thrifty vines, come during the growing season and take a look at them.

Yours truly,

R. POSTANO.

Oakville, Dec., 1884.

ISHAM SWEET is a Wisconsin apple of decided value. My own trees have given me a barrel this year, and it has been the first winter sweet that has proved hardy enough for this climate. It is of medium size, nearly round, dark red, yellow flesh, and a very rich sweet,—a very good dessert fruit of its class. It keeps quite well.—DR. HOSKINS, in *Home Farm*.

THE GRAPE.

[A paper read before the Summit County Horticultural Society, by M. Crawford, of Cuyahoga Falls, Ohio]

There is a pressing need of more light on grape culture, for the reason that such knowledge can be turned to good account by nearly all classes. We can not all have an orchard, or even a single fruit tree. Some have not room for a row of currant bushes or a strawberry bed; but who has not room for a grape vine? Its branches may be trained on a building or fence. Its roots will run under the sidewalk, along the foundation, beneath the buildings—anywhere and everywhere—in search of plant food, which, dissolved in water, is carried to the leaves and boiled down, as it were, and converted into grapes. What an opportunity this is for every man and woman to add to the comfort, health and happiness of those dependent on them! Horticulture gives to working men almost the only opportunity of adding to their income outside of working hours, and this branch of it is especially inviting. I once knew of a large vine in a city lot that produced over a hundred dollars' worth of grapes each season for several consecutive years. How much is it worth to have all the grapes one wants for himself, his family and his friends for even three months in the year? And this is within the reach of nearly all, without making any effort to keep them beyond the season. The vine, besides furnishing such delicious fruit, adds greatly to the attractiveness of home. Even the name, "vine-covered cottage" or "vine-clad hills," suggests that which, once possessed, can never be forgotten.

WHERE IT FLOURISHES.

Grapes may be grown in all parts of the United States and Canada, wherever a grape grower can be found; and the more unfavorable the locality, the

better will be his success, for this reason: the greater the difficulties to be overcome, the greater effort is put forth. If he lives far north, he will cover his vines in winter; if too far south, he will grow them on the north side of a hill or building. If his ground be too wet, he will drain it, or grow his vines in a raised border. Michigan, cool and level, the last place one would expect this warm-blooded fruit to flourish, sends hundreds of tons to Chicago and other markets, and sends cuttings to France. Campbell, of Delaware, O., has the meanest place in the country to raise grapes, but he has splendid success, and long may he flourish!

Some parts of the country are so favorable to this industry that success comes almost without an effort, but people are slow to learn that it may be carried on successfully almost anywhere. Dr. Buckley, now travelling in Europe, writes of a noted vineyard where the vines are all planted in baskets and fastened to a bare rock, six or seven hundred feet high.

WHEN TO PLANT.

The vine may be planted after the leaves fall, and at any time before growth commences in the spring. A stronger growth will follow fall planting, provided the vines receive no injury during the winter.

HOW TO PLANT.

If the vines be strong, it is only necessary that their roots be spread in a natural position, and a little deeper than they were before, and that fine, rich soil be brought in close contact with them, and the hole filled up. If weak, single-eye vines be used, greater care must be given. Fine roots that have grown in a mellow bed, and within an inch or two of the surface, should not be covered to a great depth at first. This is true even of asparagus. The roots of a plant must have air or die.

It is very important that the roots of no other plant occupy the soil near the newly planted vine. Its roots will stand a poor chance among those of an established tree or vine. Neither should strong growing varieties be planted near weak ones. Many a grape of real merit has been condemned as a poor grower because such gross feeders as the Concord have robbed it. I have an Isabella vine that has struggled between two Concord nine years, and has made but little headway, while they are increasing in strength. Few people have any idea of the distance a tree will send its roots. I read of a gardener who cut down a row of elms because their roots interfered with the flower beds three hundred feet distant.

DISTANCE APART.

That vines may be set three feet apart each way, and be kept in bearing condition, I have no doubt. Thirteen years ago I planted a lot of vines in a row thirty inches apart, and two in a place. The second year I allowed one in each place to bear a large crop, and then cut it away in the fall. These vines have remained in good condition ever since, although as much fruit might have been produced if they had been thinned first to five feet apart and then to ten.

The above cases are given to show what may be done—not what should be done. My experience leads me to believe that a vine is more likely to continue in health if it be allowed to increase in size—to have more room each year. In nearly every instance a thinning of the vines in a vineyard has been followed by satisfactory results. One grower who has thinned till his vines stand 15 feet apart each way, claims to have found the best distance. For a vineyard I prefer about eight feet each way, and for a town lot I would stick them wherever I could find

room. It is well, when vines are worth but a few cents apiece, to plant two or three times as many as are wanted, and the extra ones may be allowed to bear heavily—one-half the second year, and the other the third, and then be cut away. This gives the permanent vines a fine chance to get strong before they bear. A vine may be extended to any distance along a trellis or support, but it requires time. It should not be lengthened more than two or three feet in any direction in a single season.

CHOICE OF VARIETIES.

What to plant is an important question and should be carefully considered. Very much will depend on the grower. If he understand the wants of the vine, and can supply them, he can raise any variety, and should choose only such as are desirable. It is very unsatisfactory to spend money, time and skill in raising an inferior article—especially if it be for one's own. It is always well for beginners to plant some Concord and Worden vines, for they are very reliable and quite good.

PREPARATION OF THE SOIL.

To prepare the soil for grapes is to make it dry and rich. If you want to do more than this, make it drier and richer. It is not sufficient that it be well under-drained, so that water will not lie, but the surface water should be allowed to get off before the ground becomes saturated. Then plow and harrow thoroughly, as for any other crop.

FERTILIZERS.

Thoroughly decomposed barn-yard manure is sufficient for the grape or any other crop we cultivate. In its absence, bone dust and ashes answer all purposes. Nitrogenous manures cause a rapid growth, but they should never be used where the highest flavored fruit is desired. The choicest wine is made from grapes grown on poor, rocky

hillsides, and when it becomes necessary to use a fertilizer the next crop is made up and sold under an assumed name, lest the brand be brought into disrepute.

Manure should be applied in the fall after the grapes are gathered, so that it may leach into the soil during the winter. Grape roots have a special liking for bones, and seem almost to know where to go to find them. A Delaware vine sent a root some distance to a hole in which bones had been buried, and then it branched, and nearly surrounded every bone with roots. The owner prized the vine, and would not have injured it willingly, but in spading he accidentally cut the root leading to the hole. The vine died, and he ascertained that it had drawn nearly all its food through that one root.

Eight or nine years ago, when the Lady grape was introduced, I obtained one and planted it as follows: I dug a hole four feet in diameter and two feet deep, and nearly filled it with cows' heads from the slaughter-house. I then filled in among the bones some good soil and planted the vine, and then sodded it over. The turf has never been removed since, and the vine has done well from the first, although I have no doubt but that the roots of the Concord and Worden near by are trying to get the bones away from the Lady.

Is it not encouraging to think that on ten feet square of ordinary land, a boy may dig in a wheelbarrow load of bones, and a bushel of ashes, plant a vine worth 10 cents, and then cover the space with grass, and that vine will go on changing those bones into fruit, producing bushels every year until the boy becomes an old man. All the vine will need is a little trimming and a place to hang out its leaves.

CHOICE OF VINES.

The majority of vines are grown in the open air from cuttings. If they have ripened at least a foot of wood, and their roots have received no injury, they are safe to plant. Layers of the best quality, from bearing vines that have not been weakened in any way, are still better, while those made from green wood, late in the season, are almost worthless.

Vines made from single eyes, started under glass early in the season, and grown with skill and care, are superior to those grown in the open air. New, high-priced varieties are usually grown in this manner. * * *

SUMMER PRUNING.

A vine needs some summer pruning—enough to regulate its growth. No matter what care and skill may have been exercised in pruning and tying up before the growing season, some buds will start with greater vigor than others, and unless they be stopped early in the summer, they will appropriate to themselves more than their share of sap, leaving other parts of the vine in a starving condition. It is the vine grower's place to see that all have an equal chance, and he should be on the lookout and nip the ends of these would-be-monopolists, and while they are recovering the weaker shoots will catch up, and perhaps hold their own. This much seems necessary to equalize the growth. Besides this, we must see that the fruit has a fair chance to ripen, and that good bearing wood be provided for the next season; for without such provision, fine fruit can not be produced. A vine in vigorous growth sends out a lateral at every joint, and these should be nipped off beyond the first leaf when the best results are desired. This should be done early. By this means the main cane with its leaves and fruit will receive the sap

instead of its being wasted in the production of useless laterals. This will greatly enlarge and strengthen the leaves, and give more chance for light and air among them.

Some varieties keep on growing until quite late without ripening their wood. This can be remedied by stopping the shoots when they have grown far enough. Unripe wood accompanies unripe roots, and neither are desirable. The above, if faithfully carried out, is the perfection of summer pruning, and is really nothing but the prevention of useless growth. The removal of any considerable amount of foliage in the growing season is weakening to the vine.

PRUNING AND TRAINING

Constitute the important part of grape culture, and without them there can be no permanent success. A vine on trees, with plenty of room, will flourish with little or no pruning; and a young vine on a trellis will endure bad pruning for a time; but a poor method, or a good method poorly carried out, will ultimately result in failure. We prune to enable the vine to mature the greatest amount of fruit, with a satisfactory amount of wood for the following year. To do this intelligently, one must know something of the habits of the vine, the treatment to which it has been subjected, and the fertility of the soil in which it grows. There is enough in the subject for an entire essay, and I can do no more here than to give a few suggestions.

Before a vine can produce fruit, it must have bearing wood; *i. e.*, well matured canes of the previous year's growth; and as the sap tends towards the extremities, especially the top, this bearing wood must be left on a level as far as possible. Otherwise, the sap will flow past the lower buds and force the top ones into a rampant growth. For

this reason it is entirely useless to attempt to cover any considerable amount of vertical space with a single vine, and expect it to bear above and below at the same time. With a majority of people it requires but a few years to get all the bearing wood to the top of the trellis. Where a cane of even two or three feet is left to bear, it must be bent to impede the flow of sap, in order that all the buds may start alike. If this be properly attended to, each bud will get its full share, the growth will be uniform, and but little summer pruning will be needed.

The proper amount of wood to leave for bearing depends on the age and strength of the vine, the fertility of the soil and the trellis accommodations, and can be best learned by experience. If allowed to over-bear, the wood and fruit will fail to ripen and the vine will be weakened, if not permanently injured. If pruned too close, a vigorous growth will follow, but little fruit will be produced, and, unless well summer-pruned, the usefulness of the vine will be injured for the following year, and the evil tends to perpetuate itself. The bearing wood should be evenly distributed over the vine and about the same amount on each arm.

DISEASES.

The grape, like all other fruits, is subject to disease, especially if its vitality be lowered by any means. Mildew and rot are most to be feared.

Mildew is caused mainly by too much moisture in the soil, and is augmented by a lack of air and sunshine on the foliage. Rapid and perfect drainage is the remedy.

The rot is caused by the spores of a fungus, which, though invisible to the naked eye, are carried by the wind and deposited on the fruit, where they germinate and grow, causing the rot. These rotten grapes lie on the ground all

winter, and when the warm weather comes the spores are again sent out, like "smoke" from a puffball, and are deposited on green grapes, where the same process is repeated. Now, to prevent this, we must either destroy the spores before they reach the grapes, prevent their germinating on the grapes, or prevent their growth after they germinate. If the rotten grapes could be swept up and burned in the fall, the number of spores would be greatly diminished, especially if our neighbors do the same. No matter how many spores there may be, they cannot germinate without moisture. This is why grapes never rot when grown on a building under a cornice. A wide board nailed over the trellis answers very well, and paper bags put over the clusters, when the berries are small, and fastened with a pin or tied on, are effective. It has been known for years that no fungus growth can take place in the presence of carbolic acid. One ounce of carbolic acid, dissolved in five gallons of water, and sprayed over the fruit when the rot appears, will stop its farther progress. This discovery, like all others in horticulture, is given free as air, although no man can estimate its value.

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TESTING NEW GRAPES.

People should exercise some common sense in buying new varieties of grapes or other fruits. If one can afford the outlay—which of necessity must be considerable—it is a pleasure to test the new varieties as they come into the market. He is then qualified to report for the benefit of those who may profit by his experience. Until a variety has had a fair trial no man has any right to speak against it. The fact of its being new argues nothing; all were new once.

If one can not afford to buy high-priced varieties, he should in all fairness withhold his testimony in regard to

them. It is worthless to others and damaging to himself. It is very unfortunate that in this matter—and most others—those who know the least make the most noise.

The originators of new fruits have done more to advance the cause of horticulture than any other class, and they are clearly entitled to a reward for their labors; and this they can not get without charging a seemingly high price. With the introducer the case is the same. He must publish lengthy descriptions and testimonials, and this is costly and must be met by high prices.

WHAT HAS BEEN DONE.

A few years ago I planted fifty very small Concord vines four feet apart. They received no extra care, and the third year, while yet on stakes, they produced over 400 pounds. I have often known vines to yield over 60 pounds the third year. I once planted an Iona vine four years old, that had been three times transplanted and root-pruned. It was cut back to three eyes, each of which sent out a shoot bearing three clusters. One-third of the fruit was removed, and quite early in the summer the shoots reached the top of an eight-foot stake. They were then allowed to grow seven feet further on twine stretched horizontally, at which point the ends were nipped. The vine ripened the 45 feet of wood and six fine clusters of fruit. The next season two of the canes were shortened to three feet, and the other to two buds. The three-foot canes were laid down horizontally and allowed to bear over 25 pounds of fruit.

VALUE OF FOREST PRODUCTS.

The "Working" Report of the Forestry Division at Washington (revised in the Report of the Commissioner of Agriculture) fixes the estimated value of the United States forest products at \$700,000,000, which is more than the

value of the corn crop, nearly twice that of the wheat product, ten times the output of the silver and gold mines or the value of the wool product, and three times the value of the output from all the mines of the United States put together.

WATERING SMALL GARDENS.

A rubber hose is generally the most available means for watering gardens in towns and villages in which there are public water-works. But this is so expensive that people of moderate means do not use it extensively. As a substitute for rubber hose I have employed half-inch iron pipe, with very satisfactory results. From the water-pipe in the street to the rear end of my garden, the distance is over three hundred feet. Last year there was not a day, during the entire growing season, when any portion of the garden needed water; but the season previous we had no rain for more than six weeks. During such dry and hot weather the garden needed water almost every day.

As a substitute for hose, I purchased two hundred feet of half-inch iron pipe, in lengths of about sixteen feet each, at \$3.75 per hundred feet. Galvanized pipe usually costs twice as much as the plain iron. To keep the pipe from rusting, a heavy coat of paint was applied to the outside; but pitch or coal-tar, applied boiling hot, will be cheaper and more durable than paint.

Now, instead of burying the pipe in the ground, I laid it on the surface and screwed the lengths together, thus forming a line of pipe from a faucet in the kitchen to the rear end of the garden. About every fifty feet, there is a T coupling, provided with a short piece of pipe, say six inches long, the ends of which are closed by an iron cap screwed on the end of each short piece where there is a T. By opening the faucet

in the kitchen, water will rush in a minute to the farther end of the garden. Now we attach a hose, ten feet long, to any part of the pipe where there is a T, and with that an abundant supply of water can be directed to any part of the grounds. As soon as one part of the garden has been watered sufficiently, unscrew the short hose from the T, screw on the iron cap, and carry the hose to the next T, remove the cap and screw on the hose, and throw water fifty feet or more on both sides of the line of iron pipe. At the close of the growing season, unscrew the lengths of iron pipe and store them under the floor of a veranda or in the garret until wanted another season.—*Am. Garden.*

SHAFFER'S COLOSSAL.

The editor of the *Rural Home* recently visited some of the farms in Western New York belonging to the Wayne County Evaporated Fruit Company, and says as follows:

Mr. Van Dusen has taken a great fancy to the Shaffer raspberry, and is planting them as fast as he can make plants. As we saw it bearing on the Lyons farm we are not surprised at his enthusiasm in its favor. It was bearing an immense crop. The Shaffer was, evidently, a chance hybrid of the red and black found on the farm of a Mr. Shaffer, of Wheatland (we think), Monroe County. Was introduced by Chas. A. Green, of Clifton, in the same county. When we first saw it on Mr. Green's grounds, about four years since, we said that it was the largest raspberry we ever saw, but thought its color—a dark purple—would prove an obstacle to its ready sale in market. But that objection has been avoided by not offering for sale in its fresh state, but by canning or evaporating. Mr. Van Dusen evaporated his crop last year, and disposed of the dried fruit at

50 cents per pound, 20 cents more than he received for black caps dried. He was offered, this year, 10 cents a quart for his Shaffer's for canning. So it would appear that no difficulty need be feared in disposing of the fruit. It loses considerable more in drying than Ohio or the juiciest black cap.

We believe that it will yield as much or more than any other variety and as it is perfectly hardy and a wonderful grower, it will readily be seen that it has strong claims. We have seen no other red raspberry which equals it for canning purposes.

COAL ASHES.

A correspondent of the *Country Gentleman* thinks that coal ashes are in some as yet unexplained way beneficial to garden vegetables. This is what he says :

It has been long known that coal ashes have the effect of mellowing the soil, particularly clay. A rigid clay may thus be greatly improved in its texture. It has been held that the fertilizing properties of coal ashes are small; repeated analyses have shown this. Yet, used as they have been here in gardens, without other manure, the effect has been such as to lead irresistibly to the conclusion that they develop in some way a considerable amount of fertility. All cannot be accounted for by the mechanical improvement, as in cases where this is not lacking the effect is still present, and apparently undiminished, if not sometimes increased—in this case acting seemingly as wood ashes do, requiring other (organic) fertility to aid, if full results would be obtained.

I was surprised, early in the spring, on seeing unusually thrifty tomatoes and beans, to learn that the only manure used was coal ashes, scattered in the garden to get them out of the way.

This was practiced for several years, and no manure other than this had been used. I was shown another garden to-day which was treated exactly in the same way the only dressing being coal ashes. Here the growth seemed all that it could be. I was shown a potato grown here that weighed one pound eleven ounces and a half. It was the early Vermont, a variety not noted, I believe, for its large specimens. But they were all large, averaging from half a pound to a pound; no small ones among them, and many exceeding a pound. They were planted fifteen inches apart in the rows, a small potato dropped in each hill. The owner of this garden lays the success to the coal ashes, and says there can hardly be any mistake about it. This is the opinion of others also. My own experience is confirmatory. But the effect I find is not immediate. It is more tardy than with wood ashes, whose potash and soda act promptly.

I would advise by all means, that coal ashes, instead of being thrown away, be used in our gardens, removing the coarser parts; also on potato ground, always mixing well with the soil, and as early as the ground will admit, and so be repeated yearly, giving thus time for effect upon the soil. I find the best success where the ashes have been applied for several years. The second year is sure to tell, even when thrown upon the ground and left to lie there undisturbed, as I have abundant evidence. But the place for full action is in the soil.

I should have stated that in the second garden mentioned, where the ashes were omitted, as was the case with a small space, there was a uniform lack in the growth, being seen in the size of the vines and tubers. About a quarter of the soil of this garden was composed of ashes. In places where the proportion of ashes was the greatest, the largest

tubers were raised. There is no doubt of the general benefit of coal ashes in a garden, and their decided effect upon the tomato and potato family. They doubtless affect more or less favorably all plants, in the improved texture of the soil, which most of our old cultivated fields need. Add to this their well known manurial properties which science has pointed out, little though they be, and there is no reason why coal ashes should not be used on our land, to say nothing of what may seem an occult influence when they are put in union with the fertility of the soil, resulting thus, as appears to me, in an increased growth. I have faith in the discarded coal ashes, and I am using them to advantage.

STRAWBERRY NOTES.

(By Hon. M. P. Wilder, in *Green's Fruit Grower*.)

How has the James Vick done with you this season? It is a beautiful plant with noble trusses and a superabundance of bloom, but cannot carry out the crop to perfection without high cultivation and plenty of water. It throws up too many fruit stalks. It is a pity that the fruit is not larger. We have had frequent rains and a good season to test a large number of the new varieties, some of which I think well of. Primo is a fine, large, uniform, bright, prolific, and late variety; very good. The Prince (of strawberries) planted last fall made large stools—some with four or more trusses and produced much handsomer and high-flavored fruit. Mrs. Garfield and Jewell make good plants and are promising, but Iron Clad has not been clad with much fruit. Bouquet (a new variety from the Hudson River) is rich and high-flavored. Crescent and Duncan (the former fertilized by the latter) are my most useful early sorts. Duncan is healthy, productive and aromatic; excellent for home use. I still

hold on to many of the older sorts for a general crop, such as Charles Downing, Seth Boyden, Kentucky, Sharpless, Triomphe de Gand and Cumberland, nor would I omit the Hovey and Wilder, as grown by the originators, and as always shown at the annual strawberry exhibitions of the Massachusetts Horticultural Society. Strange indeed that these varieties are not more grown, but a neighbor of mine has an acre of the Wilder and finds a ready market previously engaged at twenty-five cents per quart. Mr. Hovey has some new plantations of his strawberry of great vigor, and I think he will be heard from next year. The Early harvest blackberry is two weeks earlier than any other I have.

THE EULALIAS.

Eulalia Japonica variegata and E. J. zebrina are, in my opinion, two of the prettiest and most desirable ornamental grasses we have in cultivation, and both should be grown by all who possess the necessary facilities. They do best when grown in a rich, deep soil, and after they have become well established, so that it is well to avoid frequent removals. Propagation is effected by division of the plants early in the spring, just before they start into growth. I know that seeds of these Eulalias are often advertised; but as far as my experience has extended I have never been enabled to raise a plant of them with variegated foliage.

For the benefit of those who are not acquainted with the Eulalias, I would say that they are reed-like plants, attaining a height of from four to six feet. E. J. variegata has foliage that bears a striking resemblance to the old ribbon or striped grass of the gardens; while the foliage of E. J. zebrina has the striping or marking across the leaf instead of longitudinally. On this account, it is a plant that will always

attract attention; but I will here say that I consider the former the prettier and more desirable of the two.

The *Eulalia* usually flowers about the middle of September, the flower panicles being produced from the summit of the stalks. At first they are brownish, and not at all showy; but as the flowers open the branches of the panicles curve over gracefully in a one-sided manner, thus presenting the appearance of ostrich plumes. If the flowers are cut when fully developed, and dried in a dry, airy situation, they will be found to be very desirable for decorative purposes during the winter season.—*Rural New Yorker*.

BEST HARDY SPIRÆAS.

BY PROF. J. L. BUDD, IOWA AGR. COLLEGE.

As some of the best spiræas found on Eastern lawns are not hardy on the prairies north of the 41st parallel, a few notes on the finest "ironclads" may be useful to propagators and planters.

Spiræa opulifolia: A large shrub with bold outlines. Its light green, lobed leaves give a pleasing expression through the season, and its abundant crop of white flowers in June is followed by showy seed capsules which in the latter part of the season are shaded with deep crimson. It is easily propagated by cuttings of the new wood.

S. trilobata: This is a special favorite in Michigan, Ohio, and the Eastern States, and seems still more beautiful on the prairie. Its branches spread out laterally, with recurved tips loaded in May with compact corymbs of pure white flowers. Its glaucous, lobed leaves are pretty through the season. It is propagated from cuttings with base of two-year-old wood.

S. Van Houttei: Much like *trilobata* in leaf, expression, and flower, but the habit of the plant is more grace-

ful, and the pure white flowers are larger. It is propagated the same as *trilobata*.

S. Douglasii: An erect, handsome shrub, with oblong lanceolate leaves with a white down beneath. The flowers appear in July and often continue to middle of August. The long, dense panicles of bright pink flowers form on the terminal points of the season's growth of new wood. Where the wood of the preceding year's growth is cut back in early spring or autumn, as practised with the roses, the exhibit of bloom exceeds even that on the *spiræa callosa*, which with us fails to endure the winters. Propagated from cuttings as above.

S. Nobleana: Much like *Douglasii* in habit and foliage, but with broader and looser racemes of purplish red flowers in July. In all respects a fine showy variety. It is propagated from cuttings.

S. hypericifolia: A larger growing shrub than the four preceding. It runs into many varieties varying in leaf and habit of flowering. The variety best known with us is *acuta*, sometimes grown as *S. Sibirica*. The flowers are white, in small terminal umbels on short spring growths from the new wood. Properly shaped and cut back it becomes a sheet of bloom in early May. It is propagated from cuttings of new wood, or from suckers or root cuttings.

S. chamædrifolia: This is a beautiful species running into a number of varieties, all hardy so far as tried. It has small, wiry branches covered in June with clusters of white flowers. In Northeast Europe it is much used for ornamental hedging. In this form it becomes literally a wall of pure white flowers and its foliage is pretty through the season.

The fine Japanese species are not

noted, as my purpose is to direct attention to shrubs that will live and thrive in all parts of our interior prairies.

CHINESE PRIMROSES.

For a neat flowering plant in the window, there is nothing which will repay so well for the space occupied as one or two of the Chinese Primroses. They are natives of China, and are not adapted to out-door culture. They bloom freely under glass, but unlike the other classes of primroses, require sun, and if properly managed, flower all the year round, although their most flourishing season is through the winter and early spring. All that is necessary for their cultivation is a moderately warm situation, close to the glass, medium moisture, and good drainage, which is secured by filling in the bottom of the crocks with pieces of broken crockery. It is not well to sprinkle the plants with water, as the leaves and flowers will be speckled easily and soon decay. The leaves and flower stalks seldom grow higher than about six inches, and if the plant grows top-heavy, it should be supported by a few little sticks placed near the collar of it. As the plants do not flower so well after the first year, it is therefore advisable to procure young plants every year, or to raise them from seed. This, however, is not easy; the seeds being very fine, if carelessly watered, or allowed to dry out, they will be lost.

In sowing the seed, care must be taken to cover them lightly with the soil, or what is better, not to cover them at all, but to press them gently into the surface of the soil with a smooth piece of wood. The watering should be done by saucers placed underneath the pots, or by very fine sprinklers, so as not to wash the soil; but even after the young plants have developed two or three leaves, they require careful watering; if the soil is permitted to get

dry, the very tender roots may be dried up in a few hours. Our way of treating the seed is this: We water the lower body of earth in the pot by a saucer, and cover the surface from time to time with a wet cloth, so as to leave the seeds undisturbed.

Of the Chinese Primroses, we have now some most beautiful varieties, double and single; the double white is certainly a beautiful plant, although it does not bloom so continuously as the other. The fringed flowers are considered the very best. — *California Horticulturist*.

THE APPLE CROP OF 1884.

Gardening Illustrated, an English horticultural publication, thus speaks of the apple crop:—Messrs. J. W. Draper and Son, Covent Gardens, have kindly furnished us with the following particulars respecting the present appearance of the Apple crop in Europe and America: *United Kingdom*—Crop much below the average. *France*—An average yield of early kinds, especially in the Gironde; late and better descriptions somewhat short. *Germany*—Short crop generally. *Belgium*—Short crop. *Holland*—very light crop. *Spain and Portugal*—Crop short, description common. *America*—There are indications that the crop will not equal in bulk that of 1880, yet the yield in some of the best producing localities is likely to be very abundant, and superior in quality to the past two seasons. After mature consideration of the various reports there is little doubt that the crop of Europe is considerably under that of many years; thus it will be from America that the supply for the United Kingdom will be derived. The prospect of shipments being advantageously made to England were never more promising, particularly for better and later description of Apples.

BOTTLED GRAPE JUICE.

An industry which has steadily gained ground for some years is that of making unfermented wine. True, it is a sort of misnomer to speak of "wine" as unfermented, but in the absence of a better term it must pass at present. It is the pure expressed juice and "blood" of the grape, prepared in such a way that it can be used as a safe beverage in any season, with no danger of intoxication, nor any awakening of an old appetite for it. It first came into demand to supplant the use of intoxicating wine at the communion service, but it has found a demand outside of that field because it is agreeable and healthy. The steps regarding its manufacture are much the same as for ordinary wine, up to the point where fermentation begins; then various processes are used for "clarifying" it, so that it shall be free and clear from sediment. Any broken clusters of sound grapes will answer, and for that reason the manufacturer furnishes a market for many grapes that can not wisely be shipped to the great cities, though of course a rather low price is paid—two and three cents a pound.

The process used in finally closing the bottles or vessels in which it is to be kept, is like that of canning fruit, corked when at "a boil," and then sealed. It must be treated much the same as canned fruit, and when opened for use in warm weather it must be speedily consumed or kept on ice to prevent fermentation. Old wine bibbers do not always take to it readily, but most other people like it amazingly, women particularly, after or during a fatiguing day's work, as it warms and refreshes, and leaves no "bad feeling" as a penance. One of our manufacturers has shipped a good deal to England, and also has orders from long distances. Wine already fermented can be made into an unfermented brand of virtually

the same quality, by placing it in open bottles in boilers filled with cold water, gradually heating it to the boiling point and then scalding; but it is troublesome and expensive, and attended with a good deal of breakage. This has been called "driving the devil out." The cost of unfermented wine in bottles is usually about \$6 a doz.—*Rural World*.

BOOKS, ETC., RECEIVED.

ILLUSTRATED CATALOGUE of Trees, Plants and Vines for sale by Green's Nursery Company, Rochester, N.Y., with hints on fruit culture; small fruits a speciality. Copy mailed free on application.

THE RURAL NEW YORKER is a weekly of sixteen pages, published at 34 Park Row, New York City, at \$2 a year. The Editors are practical farmers, who write of that which they know from experience. Every new thing is tested on their experiment farm, and the results of the trial given to their readers without fear or favor.

THE FRUIT RECORDER AND COTTAGE GARDENER, published monthly by A. M. Purdy, Palmyra, N.Y., at \$1 a year. Mr. Purdy has devoted his life to horticultural pursuits, making a specialty of small fruits, which he grows on an extensive scale. His readers get the benefit of his large experience, besides the hints and suggestions of numerous correspondents.

ALDEN'S LITERARY REVOLUTION.—John B. Alden's *Literary Revolution*, though, possibly, not making so large a "noise" in the world as three or four years ago when its remarkable work was new to the public, is really making more substantial progress than ever before. A noticeable item is the improved quality of the books issued. Guizot's famous "History of France," not sold, till recently, for much less than \$50, is put forth in eight small octavo volumes, ranking with the hand-

somest ever issued from American printing presses, including the 426 full page original illustrations, and is sold for \$7. Rawlinson's celebrated "Seven Great Monarchies of the Ancient Eastern World," is produced in elegant form, with all the maps and illustrations, reduced in price from \$18 to \$2 75. These are but representative of an immense list of standard works, ranging in price from two cents to nearly \$20, which are set forth in a descriptive catalogue of 100 pages, and which is sent free to every applicant. It certainly is worth the cost of a postal card to the publisher. John B. Alden, 393 Pearl Street, New York.

HOW THE FARM PAYS, by William Crozier and Peter Henderson. Published by Peter Henderson & Co., 35 and 37 Cortlandt Street, New York. We have very carefully perused this book, and unhesitatingly commend it to our readers as a most practical guide to successful farming. It is not a book of theories hatched in the brain of some agricultural quill driver, but the outcome of the actual experience of two men who have been successful tillers of the soil, and who herein give to others the methods and practice which have laid the foundations of their success. Mr. Crozier is widely known as a farmer who for the past twenty years has taken more prizes than any other working farmer in America for fine stock and farm products. Mr. Henderson is as widely known as a successful gardener, and is an acknowledged authority on all matters connected with the growing of vegetables and small fruits. The book is handsomely illustrated with engravings of implements found most desirable, and of animals of the most approved breeds. It is nicely printed on fine paper and strongly bound in cloth. Believing that many of our readers will desire to possess this valuable work, we will undertake to have a

copy sent, post-paid, to any person who shall remit to us the price of the book, which is \$2 50.

The December issue of the *Floral Cabinet* opens with a drawing made especially for it, entitled "Christmas Greetings," and is followed by some pleasant words from the editors regarding their plans for the new year. Among other illustrations are two new and distinct varieties of well known plants, viz.: *Begonia Sceptrum*, a handsome species recently introduced from Brazil; its beautiful foliage will bring it at once into favor, and *Spiraea Astilboides*, which bears its flowers in plummy clusters, composed of myriads of white blossoms, which will be welcomed by all admirers of this hardy plant. "Comicalities of Plants," "Some Christmas Greens" and "A Christmas Violet" are interesting contributions to the literary department, and the pages devoted to Home Decorations are filled with descriptions and illustrations of such fancy work as can be put to practical use. The managers hope to attain for 1885 a greater degree of perfection as a floral magazine, and to this end new names will appear among its contributors, and the number of illustrations will be increased.

The publishers of the *Floral Cabinet* supply to their subscribers each year premiums of a floral nature; and for 1885 they announce six different premiums from which subscribers may take their choice, embracing ten packets of flower seeds and some choice bulbs, details of which may be had on application to the publishers at 22 Vesey Street, New York. They will also send any of our readers a sample copy at half price (six cents), if this paper is mentioned.

We have arranged to furnish the *Floral Cabinet* for 1885 with choice or premiums together with our own publication at a combined price of \$1.80.

THE RENFREW FRUIT GROWER'S ASSOCIATION

Will hold its annual meeting in the Town Hall, Renfrew, on Friday, the 16th of January, 1885, commencing at one o'clock p.m. At this meeting the officers for the ensuing year will be chosen, the President deliver his annual address, and other business affecting the welfare of the society will be transacted.

The County of Renfrew Fruit Growers' Association is a live society, and doing a good work. It is the only one that sent a report of its transactions to be published with that of the Ontario Association.

MISCELLANEOUS.

CORLISS' MATCHLESS POTATOES.—The greatest yield of potatoes produced upon the *R. N.-Y.* experiment plot, up to and including 1883, was at the rate of 1,140.33 bushels per acre. The variety was Corliiss' Matchless.

THE ST. HILAIRE APPLE.—Dr. Hoskins writes to the *Home Farm* that this apple is larger than the Fameuse, more free from spots, more acid, and having perhaps slightly less flavor. It keeps five or six weeks longer, and is recommended by the Montreal Horticultural Society for those localities where the Fameuse spots badly. He adds that he regards it as preferable to the Fameuse as a market fruit.

FOREST INFLUENCE ON RAINFALL.—A forest does cause rain to fall, says the *Forestry Bulletin*, or at least it does not, as does the open plain, prevent rain from falling. This meteorological influence of the forest is due to the moist condition of the air column above the forests which tends to saturate any clouds moving through this area, thus facilitating precipitation, while the heated air over the plain tends to increase the relative capacity of an air column for moisture, therefore decreasing the chance for discharge.

THE BANGOR BLACKBERRY.—This new blackberry originated on one of the islands of the Penobscot River, and was brought to notice by the late Hon. Geo. P. Sewall,

of Oldtown, who was an enthusiastic amateur fruit-grower. The variety is perfectly hardy, enduring the severities of the Maine winters perfectly without protection; it is productive, yielding regular and abundant crops, and is a very early sort. The berry is large, growing in clusters of ten or twelve; stem stout; has no hard core, and in flavor it is rich and good. Ripe early in August.—*The Home Farm*.

SHIAWASSE BEAUTY.—This apple (a Michigan seedling) almost exactly duplicates the Fameuse in tree and fruit, yet with a distinguishable difference in the young wood. It is claimed never to spot, and Secretary Garfield of the Michigan Horticultural Society places it among the two best seedling apples of that State for excellence and profit. It seems strange that as yet it has not been more widely distributed, seeing that it obviates the Fameuse's only defect. I have the variety top-grafted, but it has not yet produced its fruit. It seems to be about as hardy as the Fameuse.—Dr. Hoskins, in *Home Farm*.

JAPAN LILIES.—Among the many beautiful lilies introduced from Japan, none are more worthy of cultivation than *Lilium rubrum*. The blossom is large, of elegant form, pure pearly white, richly studded with bright crimson, and it is exquisitely fragrant. The bulbs are cheap, hardy and easily cultivated. A single bulb, costing about twenty-five cents, will, in a few years, multiply sufficiently by offsets to fill quite a large bed. Once planted, it needs no further attention, growing better from year to year. A light soil for it is preferable, but it will do well in any rich, well drained ground. Drainage is indispensable, for the bulbs decay if kept water-soaked. They should be planted four or five inches deep, and care taken that no fresh or heating manure comes in contact with them. This lily blooms in the open ground from the middle of August to the middle of September, a well-established plant producing from six to fifteen blossoms. Offsets are formed every year around the parent bulb and the underground joints of the stems. These bulblets grow to flowering bulbs the third year.—*Prairie Farmer*.



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[No. 2.

THE DAHLIA.

Mexico is the native land and home of the Dahlia. But think not that the dahlias which there grow on the sandy plains bear much resemblance to the exquisitely colored and perfectly formed flowers shewn in the beautiful colored plate which embellishes this number. It is now almost a hundred years since Alexander von Humboldt sent the first dahlia tubers from Mexico to Madrid, in Spain. The flowers were something like a small purple sunflower. From Spain it was carried to France, and at length, in 1814, some roots were brought from France to England. From England it was introduced into the United States, about the year 1825. Since then the skill of the gardener has been improving the form and coloring, until we have such perfection of form and elegance of coloring as are seen in our plate.

In order to assist those of our readers who may choose a tuber of double-dahlia, to grow it successfully, we subjoin a few hints on its cultivation.

The dahlia flourishes best in a moderately cool and moist summer. Such was the summer of 1883, and those of our readers who attended the meeting of the

Fruit Growers' Association, held that autumn in St. Catharines, will not have forgotten the magnificent display of dahlias in the grounds of the writer. It is not possible for us to regulate the character of our summers, but knowing the kind of weather and general surroundings that suit them best, we can give them measurably such environment as will, under all the circumstances, produce the best possible results.

The soil best suited to the dahlia is one that has been made rich, has been deeply cultivated, and is quite friable. Even then it is well to put a shovelful of well-rotted manure into the hole, incorporate with it some of the best of the surface soil, scatter a little surface soil on that and plant the dahlia tubers so that the neck or collar of the plant will be just slightly below the surface of the ground. Drive a stout stake beside it, to which you can tie the dahlia as it grows, for it will need this support lest it be broken to pieces by the winds. Give the plant abundant room, say from five to six feet in every direction, and if you have several plants, set them that distance apart each way.

Do not plant your dahlias in the open ground until the summer has fairly set in, and all danger from frost is passed, for it is very sensitive to frost. When the season has advanced and you find that the weather is becoming hot and dry, then mulch your dahlias by covering the ground over the roots for the distance of two feet around the plants with two or three inches of half-rotted stable manure, and if you wish to hide this from view, throw a slight covering of surface-soil over it. This will keep the moisture that is in the soil from evaporating too rapidly, and when there is rain, it will afford some additional stimulant and nourishment to the plant. Should the weather continue dry, your dahlia will well repay you for your trouble if you will water it every evening after the sun is down, pouring the water all over the plant through the fine rose of a watering pot that will hold a good pailful of water.

After the season is over, and the autumn frosts have blackened your beautiful dahlias, then cut them off at about four inches from the ground, take up the tubers, let them dry for a couple of hours, then pack them in a box of dry soil and store them away in a perfectly frost-proof cellar until wanted for another season.

If it is desired to multiply the number of plants, this can be done by splitting the stalk down, in the spring, just before planting out, taking care that there is a bud on each piece. These buds will be found at or near the collar of the old stalk that you will split up

to increase your stock of plants. They may be also increased by cuttings of the young shoots. To do this advantageously, cover the tubers of the old plant lightly with soil, leaving the collar exposed, and place it where it may have light and heat sufficient to induce growth. When the young shoots have grown to the length of three or four inches, cut them off so as to leave a couple of buds on the part remaining attached to the plant. Set each of these cuttings in a thumb pot filled with pure sand, place them on a gentle bottom heat and shade them from the sun. In a fortnight or three weeks they will have emitted roots. They should be then re-potted into three-inch pots, filled with light, friable soil, and kept well shaded from the sun until they begin to grow. During all this time, water cautiously, keeping the sand or the soil moist but not wet. The buds left on the portion of the shoot attached to the old plant will grow into other shoots in due time; these may be cut off in the same manner and rooted in the same way, and the process repeated as long as desired.

When these rooted cuttings have become well established, they will no longer require shading from the sun, but should be gradually inured to the sun and air, or as the gardeners term it, "hardened off," so that when the summer has come and all danger of frost is over, they may be planted in the open ground in the manner already above mentioned, and treated during the growing season in the same way as

directed for the tuber. If well cared for and well fed, these cuttings will soon become large plants and yield an abundant bloom.

WANTED.

The Editor of the *Canadian Horticulturist* desires to obtain a few copies of the April number of Volume V., that is, April, 1882. Any one having a copy to spare will confer a favor by mailing it to D. W. Beadle, St. Catharines. In return for it, he will be happy to mail a copy of Volume IV. complete, if desired.

WHAT THE PEOPLE SAY.

Find enclosed one dollar, my subscription for this year to the *Horticulturist*. I was near forgetting it, as I was burned out lately, but I could not do without your valuable monthly.

THOS. KENT.

Peterboro', Jan. 7, 1885.

DEAR SIR,—I find the *Horticulturist* as interesting as ever. The Society is doing a work which is not sufficiently appreciated by the farming community. Your effort to test and disseminate information regarding hardy fruits is of priceless value to this northern country. I believe that in twenty years will be seen fine flourishing orchards on every farm. Even in this village, which at the present time is almost destitute of fruit, I am farming on what was once an island, in the valley of the Nottawasaga. I planted a small orchard ten years ago, and have met with a fair measure of success. I should be glad to write my experience if I thought it would be of any service to your readers, but really the articles from your numerous correspondents are so practical

and far-reaching that little is left to be said by an amateur.

Yours, &c.,

Minesing, Ont., Dec. 14, 1884. F. F.

[Please give your experience to our readers.]

The Canadian Baldwin you sent us as a premium last spring, grew nicely last summer. We are very much pleased with the *Horticulturist*, and can only express my astonishment that you can afford to send such valuable premiums to your subscribers. Please accept my best wishes for your future success.

Sarnia, December, 1884.

P. W.

I shall look forward to receipt of the annual Report of the Fruit Growers' Association of Ontario. Last year's report was very interesting, as also I find the *Canadian Horticulturist*. I will endeavour to send you a new subscriber or two. You certainly give good value for subscription, and should be well supported.

GEO. HALLEN.

Oakville, 31st December, 1884.

I have been much pleased with the magazine, *Canadian Horticulturist*, and have derived many hints from it that have been worth far more than the cost of the periodical.

T. J. WHEELER.

Georgetown, December, 1884.

I think that the best dollar I ever expended was when I subscribed for the *Canadian Horticulturist*. It contains a great deal of information to all lovers of fruit and flowers. I hope it may long succeed.

Yours very truly,

S. J. SMITH.

Wingham, January, 1885.

QUESTION DRAWER.

1.—I have about two acres of land which I intend planting with apple trees. It is limestone gravel mixed with sandy loam to a depth of from a foot to eighteen inches, under that a strong whitish clay. I want to plant about five kinds, to be at their best or ripen as follows:—Some in January, some February, some March, some April, some May. I want a fair sized apple with an attractive appearance and good quality, that will hold on to the tree till they are pulled off. What kinds would you recommend to fill the bill?

2.—I also have a piece of land I want to plant with asparagus. I have read a good deal about growing asparagus, and still I am partly blind. I would like to know why it should be planted deep in the ground. I think it is unnatural. When you raise plants from the seed do you put the seed six or eight inches under ground? I don't, because it is contrary to Nature's laws; and why put the plants so deep in the ground? One man says don't cut your asparagus under ground because it is hard and stringy. If it is not fit for use under ground what is the use of growing six or eight inches for nothing! Yours, SUBSCRIBER.

REPLY.—1. If "Subscriber" had added the place of his residence at the foot of his inquiries it would have been of great service in giving a satisfactory reply. As it is we are ignorant of the peculiarities of his climate. If the following varieties will thrive at his place we think they will "fill the bill," presuming, from his condition that they must have an attractive appearance, that he wants them for market purposes, which fact modifies the meaning

of the expression "good quality." For January, Hubbardston Nonsuch; for February, Wagener; for March, Baldwin; for April, Golden Russet; for May, Roxbury Russet. If the Russets are not sufficiently attractive in appearance substitute for them as follows:—For April, Ben Davis; for May, Northern Spy. It will nevertheless be found in practice that we cannot divide off our winter apples into separate months in this way with precision. They will vary somewhat in their time of coming to perfect maturity according to the variations in the seasons, and the manner in which they are treated, especially the temperature of the place where they are stored.

2. Asparagus — "Subscriber" asks why should it be planted deep in the ground? We would ask, who says it should? Certainly not the author of the *Canadian Fruit, Flower and Kitchen Gardener*. He says, page 195, "the crown covered about two inches deep with earth." If the crown is only two or three inches below the surface there will not be six or eight inches of stalk grown for nothing. The same writer says, page 196:—"It is the practice of many to cut the buds two or three inches below the surface; but why we should take so much pains to secure a long, white, woody stalk which no cooking will make tender and no person can eat, is more than we can understand. It is the practice of the writer to cut the buds, when three to five inches long, just above the surface of the ground, thus securing for the

table all the green portion, and leaving the white part in the soil. In this way there is no danger of injuring the buds yet below the surface."

MR. EDITOR.—1. Tell me the best dressing to put on apple trees for preventing the borers. Will tar and clay, as spoken of in July number, page 157, or would clay and cow dung be a preventive?

2. What could now be applied to apple trees to kill or destroy the eggs of the aphides? I know they can be destroyed in summer with tobacco water, but what will destroy the eggs now without injury to the buds of the trees?

3. How the best way to pack small plants to send to England, and what weight is allowed and what rate of postage is required?

4. How best to prepare pyrethrum powder from the pyrethrum flowers. I believe it is made from them.

Muskoka, Jan., 1885.

H.

REPLY.—1. At page 39 of the *Canadian Fruit, Flower and Kitchen Gardener* the author says:—"There is a simple method of keeping them out of the trees. Strong alkalies will destroy the vitality of the egg. The most efficient method of applying this alkali is in the form of a rosy soft soap, rubbed upon the body of the tree with a swab, particularly at the collar. A solution of potash at the rate of a pound of potash to two gallons of water will be found to answer the purpose in the absence of soft soap, but will need to be oftener applied." We have more confidence in the alkali preventive than in the gas-tar and clay, or cow dung and clay.

2. The same alkaline application can be safely applied to the trees before the buds swell, and will destroy the insects or their eggs.

3. Make a thick puddle of clay and puddle the roots well; then pack in moss that feels dry when pressed in the hand. The weight allowed to the United Kingdom for samples is eight ounces; size, 24 inches in length, and twelve inches in breadth or depth; rate of postage is one cent for every two ounces or fraction thereof.

4. It is made by drying and pulverizing the flowers. Cannot give any particular method as being the best.

I like the *Canadian Horticulturist* very much and find it quite a help.

I have a small garden and only cultivate for my own pleasure and family use. I try to have a little of everything that is going if possible, but some things fail me; perhaps you might be able to give me a few hints.

1. I have about one dozen apple trees now seven years old, but as yet have never borne fruit. They are pruned every spring and the earth stirred slightly, and to look at them they are as healthy and luxuriant as one could wish for.

2. Are some grape plants. I have six kinds of Rodgers' grapes; they are now five years old, and have not borne anything worth speaking of; they are inclined to run to wood and foliage. They are beautiful to look at. I think they are properly cared for as far as pruning and winter protecting are concerned. It may be that the climate is too cold for them and the season too short, away up here on the shore of Lake Huron.

3. I have some window roses that give me a great deal of trouble. They

are attacked by the red spider about every month, which destroys the leaves as well as keeps them from blooming; and one of them is all covered with a flat sort of a louse that sticks tight to the branches and under side of the leaves. I wash them off every two or three weeks, but they are as bad as ever by two or three weeks again. Strawberries do well up here.

I have the Wilson, Sharpless, New Dominion, and Early Canada. The Wilson is the most productive; the others are about alike in fruitage although differing in flavor.

Currants and gooseberries also do very well, but I fear I am trespassing on your time and patience.

Wishing for the *Canadian Horticulturist* an increased circulation during the coming year.

I am, Sir, respectfully yours,

MRS. JOHN GEORGE.

Port Elgin, January, 1885.

REPLY.—The probability is that the apple trees have been so well fed and cared for that they are growing too fast to bear fruit. Try what a little neglect will do for them—no pruning and no cultivation for a year, and see if they do not form blossom buds. Strong wood growth and fruit production do not go together.

2. Probably your grape vines have been pruned too severely. Leave more wood on the vines, more buds on the canes of last summer's growth. The Rogers varieties are usually rampant growers, and fruit better with moderate pruning. Try Early Victor and the Brighton.

3. You keep the atmosphere of your window too dry, hence the red spider. Put an open pan of water on the stove

and keep up a good supply of vapor. Put your lousy plant under a barrel filled with tobacco smoke, or wash it thoroughly twice a week with tobacco tea, until they disappear.

NIAGARA AND JESSICA GRAPES.

MR. EDITOR,—Will you have the kindness to inform the readers of the *Horticulturist* what description of soil is best adapted to the growth of the Niagara Grape, as well as that best suited to the Jessica; and also whether the Niagara ripens its fruit as early as the Jessica.

Can you name any sections of the Province of Ontario where the *Catalpa speciosa* has been sufficiently tested to prove it sufficiently hardy to endure our climate?

Respectfully yours,

JOHN KNOWLSON.

Lindsay, 17th Dec., 1884.

REPLY.—The writer has never grown a plant of the Niagara grape. The company controlling it would not allow nurserymen to have it except on conditions that made it of no value to them, hence we have not sufficient knowledge on the subject to frame a reply. Your neighbor, Mr. Thos. Beall, has a number of the vines; he can tell you that the vines flourish finely in his soil.

The Jessica flourishes best in a well-drained, rich, loamy soil, especially one that is of a limestone character. In point of quality it is far finer and purer than the Niagara, being wholly free from foxiness, which cannot be said of the Niagara, and ripens before it. The crop of Jessica can be marketed before the Niagara makes its appearance.

STRAWBERRIES AND GRAPES.

In your next number please tell what varieties of (1) strawberries and (2) grapes would prove most satisfactory for this part of Ontario. As I grow the fruit for home use only I care nothing about carrying properties.

S. WARREN.

Brooklyn, Jan., 1885.

REPLY.—1. For crop, Wilson and Crescent; for quality, Jersey Queen, Mrs. Garfield, and Triumph de Gand.

2. Worden, Early Victor, Moore's Early, Brighton, Jessica, Lady, Niagara, Delaware.

What soil would be the best in which to plant the hardy Catalpa?

W. SWITZER.

Anderson, Ont.

REPLY.—We have only had experience with it in sandy and gravelly loam. They do well in such soil.

I have been very anxious to find for some years back if the system of pruning and training grape vines practised by the Italians employed by the late Mr. Decourtney at Cooksville has succeeded ultimately. Perhaps you would put the question in your next issue under the head of "Question Drawer," and oblige an old subscriber.

Yours truly,

T. D. LLOYD.

P. S.—I should have said the system did very well here for a couple of years after the vines commenced to bear good crops. After that the infirmities of old age (as with myself) began to show.

—T. D. L.

REPLY.—Will some one who knows please to reply?

CORRESPONDENCE.

HEDGES.

An excellent defensive hedge for the orchard and farm can be made of our native crab apple (*pyrus malus odorata*), capable of keeping out cattle, and particularly the ubiquitous boy, who wants to help you, by disposing of your choice pears, apples, &c.

It is certainly superior to the Buckthorn, Osage Orange, Honey Locust, and all the varieties of the Hawthorn (*crataegus*) family. The European variety (*orycantha*) is too tender, and very subject to the downy aphides, and our natives of this genus, although hardy and bear shearing or pruning well, are subject to suckering.

For ornamental hedges, there is plenty of material suitable to the taste of the planter, such as White Cedar (*arborvitae*), Hemlock Spruce, Tartarian Honey-suckle, Japan Quince (*pyrus japonica*), Privet (*Lygustrum vulgare*), Barberry (*Berberis*).

For evergreen hedging, or wind-breaks, nothing that has as yet been tried is equal to the Norway Spruce; of deciduous trees, the Beech (*Fagus ferruginea*) might be used advantageously, as it retains its browned foliage during the winter. The European Beech (*Fagus sylvatica*) is used for this purpose, and also for ornamental purposes. I have tried it, but find that the young shoots are apt to be frozen back during winter.

For ornamental hedges, there is plenty of material suitable for this purpose to meet the taste of the planter, such as our common *Arborvitae*, Hemlock Spruce, Tartarian Honey-suckle, Japan Quince, Privet, &c. I have also seen, when residing in the Lowlands of Scotland, the old-fashioned, original Fuschia (*var. coccinea*), used for this purpose, but it was protected in winter

by broom boughs. It would scarcely be hardy enough in this climate.

The native crab apple grows singly on the lawn, is a beautiful object when in blossom, the flowers are very fragrant, and it will certainly vie with any of the fancy hawthorns, which are tender and only short-lived. I am astonished that the crab apple has never appeared in the select lists of ornamental small trees. It may possibly be that it is because it is a native—foreigners being preferred.

Berlin, January, 1885.

R.

APPLES FOR MARKET.

The best varieties of apples for a town or city market, and to realize the best prices for summer and early fall, are in their order of ripening, the following, viz.:—Tetofsky, Early Harvest (when grown without spots), Duchess of Oldenberg, Red Astrachan, Benoni, Keswick Codlin, Hawley, Porter, St. Lawrence, Gravenstein, and Colvert. The new Russian varieties lately introduced—the Grand Sultan and Yellow Transparent—have not as yet fruited, but from what I learn, they will be an acquisition to our very early varieties, and likely to throw the Early Harvest out of cultivation, as it cannot now be depended on. Late fall or early winter are comparatively worthless for marketing, and are only fit for making cider, feeding stock, and evaporating. The Ribstone Pippin, Blenheim Orange, and Dutch Mignonne, all belonging to the same type, are the only exceptions. Late winter varieties, such as the following:—Golden Russet, Baldwin, Northern Spy, Rhode Island Greening, and Grime's Golden, are good value in either a home or foreign market, being generally well known.

I know that a large number of varieties of apples may suit the tastes of amateurs, exhibitors at shows, and experimentalists, but to the party who

wants to make apple-growing profitable, the varieties alluded to are all that are necessarily required.

SIMON ROY.

Berlin, January, 1885.

PEARS.

I am of the opinion that if a different mode of propagating our choice pears from what is generally practised, namely by working close at the ground, is not inaugurated, there will be very few left escaping the blight.

Amongst some thirty varieties which I have tried, being root-worked or near the ground, I find only a few that can be really relied upon, and these are the Rostiezer, Clapp's Favorite, Vezouziere (a Bergamot shaped fruit), Ananas D'Eté, Doyenné D'Eté, and Belle Lucrative.

If worked at standard height, say about four feet, on wilding stocks, the more thorny the better, almost all varieties do better; fine specimens of the following varieties can be grown in this way, such as Bartlett, Bosc, D'Anjou, Superfine, Buffum, Mount Vernon and Giffard, which latter is particularly adapted for this manner of propagation, as it is a poor grower when worked at the ground.

The Flemish Beauty is generally considered a hardy and very thrifty growing tree; the latter I will admit, but it is a tree as subject to blight as the Dearborn Seedling.

I examined some trees which were badly blighted and found that the heart of the trunk was rotten; so also of some others, such as Lawrence, Clairgeau, Easter, and Onondaga, all were blighted and prematurely affected internally. Has this internal condition of the tree anything to do with blight? I am persuaded it has.

Only a limited number of varieties of the pear are successfully grown on the quince stock, and these are Louise

Bonne, Clapp's Favorite and Ananas D'Etè.

When the pear is budded at or near the ground upon a very thrifty stock the first year's growth is too rapid, and it seldom matures sufficiently, especially if the summer is short. This evidently is the cause of the debility of the tree.

I think of working at standard height some of our valuable apples, such as Baldwin, King of Tompkins and Chenango Strawberry, they being too tender when low worked.

Berlin, January, 1885.

R.

THE RUSSIAN MULBERRY.

No doubt some who have planted only single seedlings of the famed Russian Mulberry will be disappointed in not getting fruit. The fact is the tree is diœcious, either being a male (*staminate*) or a female (*pistillate*), and when grown apart at a distance from the effects of insects or the wind, the female tree will bear fruit, but no seeds; the male will blossom but have no fruit. This peculiarity is often witnessed in the vegetable kingdom. For example, our cut-leaved Weeping Birch is a female and cannot be propagated from seed if separated from a monœcious birch. The Lombardy Poplar is a male tree, and both are or can be propagated artificially, either by cuttings, suckers, or budding, or grafting, as is the case with the former. A notable instance of the sexual character of plants may be seen in the hemp; in a clump, you will find both male and female plants growing together.

What has led to the supposition that this variety of Mulberry, being a native of Russia, must therefore be hardy, is that the Duchess of Oldenburg is also Russian and is very hardy. But this is a mistake. This apple comes from the confines of Siberia, from a latitude as far north as Quebec or Labrador.

The Russian Mulberry is indigenous to the South of Russia, near the sea of Azov, the climate being as warm as that of Ontario in summer, and not so cold in winter. I find the tree no hardier than either the Asiatic or American varieties, and where either cannot be grown successfully, neither will the Russian succeed.

Seedlings of all cultivated fruits cannot be depended on. One in a thousand may be good, and the only way to perpetuate good varieties is by artificial processes. The cultivated Mulberry, either for feeding the silk worm or for fruit, is grown artificially. The majority of seedlings of the Russian variety produce fruit no larger than a common raspberry.

All Mulberries are more or less injured in this locality by late spring frosts, the young shoots being killed back to the branches.

Berlin, January, 1885.

R.

A PLEA FOR THE CHAMPION GRAPE.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

In 1878 your correspondent planted six grape vines. The smallest among them was a Champion. In three years it had far out-grown all the others, and commenced to bear. The year following it was so loaded with fruit, as to make the impression it would surely die from over-bearing. But no; for it has gone on increasing ever since. In 1883, while the grapes on all the other vines were badly mildewed, the Champion was completely free. Last year it reached twenty-five feet on the trellis, covering it ten feet wide, producing 140 pounds of good, sweet grapes. From the 25th August they were eaten freely, sold, given away, while the seeds were removed from a sufficient quantity to fill twenty quart cans. After being boiled down with sugar, the expressed juice of the remainder was put up as unfermented wine,

which, without one particle of alcohol, keeps well, making a refreshing, wholesome beverage. In drinking it no danger of imitating Noah.

In flavour the Champion grape may be inferior; yet in the three essential particulars of being very early, wholly free from mildew, and immensely productive, it has no peer: for every year it bears twice the quantity of all the other vines put together.

True, one thing in its favour must be mentioned. It happened to be planted on the edge of an under-ground pool, caused by water from the kitchen sink. But even here its benefit is apparent, for it certainly absorbs the noxious qualities of the pool, thus promoting health. Who wishes a full supply of ripe, sweet grapes on his table two weeks earlier than the Concord comes in, let him plant the Champion. Surely this is the grape for the million.

FRANCIS COLEMAN.

Hamilton City, Ont.

REPORT ON PLANT RECEIVED FROM F. G. A.

The grape vine (Prentiss G.) you sent me last spring has done well. Before I got it I had planted the Pocklington, Lady and Lady Washington, still it seemed to take root sooner and send out vines faster than any of them. By the fall it had produced more permanent wood than any of the others. Another feature about the plant I noticed compared to the others was that it stood the autumn frosts better than the others. My soil is very warm and dry, there being only about eight inches of earth on solid limestone rock, with here and there fissures running through it. In the very dry season I have to water all my plants, and while I noticed some of my other grape vines with their leaves softened the Prentiss remained fresh and green all through

the season. I may be able to report further after another season's trial.

Yours respectfully,

A. C. SLOAN, M. B.

Annan, Dec. 29th, 1884.

BLACK KNOT.

Scientists have demonstrated that the Black Knot, affecting the plum and cherry, is a fungoid epidemic, and I think this theory is correct. Trees of the Damsion type are more subject to it, and all the hybrids are more or less affected, particularly the Lombard, Purple Gage, and Early Orleans; others not having so much of the Syrian element in their composition, are not quite so bad, such as Pond's Seedling, Bradshaw, Glass' Seedling, and Imperial Gage. The only varieties that are exempt on my grounds are the Prince's Yellow Gage and Yellow Magnumbonum, evidently having a hardier element in their composition, probably from some of the wild varieties indigenous to Europe. I think the liability of trees to be affected with the Black Knot is exactly in accordance with an unsound condition: the trees which I cut down were all rotten inside, having only a small rind of sound wood next to the bark, illustrating that an unsound condition is more subject to the attack of epidemics than a sound one.

Plum growing has hitherto been a profitable business, but since the advent of the Black Knot, orchardists will have to substitute something else.

A field is now open for hybridists, and I have no doubt but that a hardier race can be produced, admixed with some of the European and American varieties of plums. The hybrids now produced between the European and American grapes are a success, why not the plum.

Berlin.

R.

THE ENGLISH SPARROW.

Alas for the poor Sparrow, whose services by some are lightly thought of, and who is discarded as a nuisance. But such is the way of the world generally. A good and faithful servant, after years of faithful and honest endeavors to perform the duties assigned to him, is not unfrequently shown the cold shoulder, and sometimes kicked into the bargain. So it is precisely with the Sparrow. After he has cleared the orchards of caterpillars and our ornamental trees of these and other injurious insects, he is shown the cold shoulder. The clamor is now for his extermination; but like the rat, who is also useful in his way, both being associates of man, who have followed him from Asia in all his migrations, neither now are quite so easily got rid of, having once obtained a foot-hold.

Arguments have been adduced of rather a hypothetical character, and theories advanced that the decrease of insects is due either to insects or fungoid parasites, preying upon them. This may all sound very plausible in theory, but more enlightened investigation is required to make reasoners believe.

One fact is certainly patent, that with the introduction of the Sparrow, bugs of almost all kinds injurious to trees, have gradually disappeared. Our native insectivorous birds not being adequate to the emergency, hence the importation of the Sparrow was necessary.

In some places in Europe birds were slaughtered indiscriminately, and the result was a pest of caterpillars was allowed undisturbed sway, and the birds had to be brought back again.

If the Sparrow is annihilated, a new era of bugs will be inaugurated, perhaps worse than what we have experienced, then we will have a confirmation of his former usefulness.

His musical talents have not as yet been developed, but his song, although

short, is often repeated, giving quantity for quality. Neither is he gaudily attired, his forte is use and not ornament.

The Coney (rabbit), a native of Africa, at one time over-ran Spain, committed great devastation, just such as is done in the Australian Colonies at present. Some Savan advised the introduction of another African animal, the Ferret, the natural enemy of the Coney. The country was soon cleared of the destructive nuisance, but when the Coney was destroyed and the Ferret had no more to live on, he fell back on the hen-roosts for a living; but the last evil was of minor destruction than the first, and more easily kept in control.

So it is with the Sparrow, his natural food is almost exhausted; he must live; he will naturally fall back upon grain, and is but poorly remunerated for his services.

Evils apparently exist in the moral as well as in the natural world, and of such choose the least; it is better to submit to a minor evil, provided it prevents a greater. The Sparrow is, of course, a grain eater when he cannot get bugs to eat, but his good services amply repay all the depredation he does; besides, if too numerous, the Sparrow is more easily controlled than the bug pest, which has as yet defeated human ingenuity, especially the tent caterpillar, span-worm, codlin moth, and fall web-worm.

The introduction of the Sparrow as a vermin destroyer, is due to James Goldie, Esq. He at the time residing at Elizabethtown, New Jersey. Some parties interviewed him, representing the ravages done by the span-worm to the trees in the avenues, parks and squares of New York, and asked for a probable remedy; the reply was given to introduce the European Sparrow, advice which was acted upon; and as the Sparrow began to increase, a corresponding decrease took place in the

span-worms. Other cities, Boston, Philadelphia, &c., followed suit, with equally favorable results.

SIMON ROY.

Berlin, 5th Jan., 1885.

SMALL FRUITS.

(For the *Canadian Horticulturist*.)

Some of our friends often ask us is the growing of small fruits profitable?

In reply we say, "Yes," under certain conditions.

There are two kinds of mistakes which people make when they begin the cultivation of small fruit.

One is to devote the entire attention to one kind, and the other is to attempt the cultivation of too many kinds. If we have only one kind under cultivation, and that kind fails (as the strawberry did nearly so last season owing to the frost in the latter end of May last), we are in a bad fix. The secret of profitable small fruit culture is to provide a succession of crops, then the income will be steady, and some of the necessary things about the business, which cost money, can be in steady use. Really profitable and reasonably sure small fruit culture, we see therefore, will be found in strawberries, raspberries, goosberries, currants and blackberries.

As to the varieties of the different fruits to be cultivated, it will depend altogether on the market. The individual taste of the grower has nothing to do with it. He is growing fruit for profit: he is growing it for others to buy and eat, and he must satisfy them, and, too, he must regard the shipping quality of his fruit. I have seen fruit shipped to St. Mary's Market, and you could track the express waggon from the station to the store, the juice running from the crates. A good shipping variety, although it does not bring so much in price in the market as some other variety, is, of course, better

to grow than a variety which is really superior otherwise, but will be worthless by the time it reaches the consumer. The main point in all marketable things is, the better it looks the better it will sell; and this is true in regard to the small fruits, the better it looks the better it will sell. The public know nothing about quality, species, and colour that people are after. Those about to engage in small fruit culture in the spring, should decide on a sufficient number to last through the season, and next select varieties the market demands, keeping in view their shipping qualities and productiveness.

If spared, my next paper will be my experience in these varieties.

Fish Creek.

JOHN LITTLE.

PLUM CURCULIO.

MR. EDITOR,—I have been a member of the Fruit-Growers' Association for a number of years, and have had the benefit of many writers.

As I have read so many requests to write experience of any fruits or vegetables, I venture to contribute my mite.

I read on page six of your monthly, of 1885, what Mr. Johnston Eaton, of Pennsylvania, writes about his experience with plum trees; he says "take sulphur and smoke the trees once a week for two months." Now, Sir, I raise good crops of plums each alternate year. The way I do, I take air-slacked lime when the plum trees are in full bloom. When the bloom begins to fall, in the morning, when the dew is on the trees, make the trees white with the lime; three times in two weeks is plenty, or when you think proper.

CABBAGE WORM.

Last year, 1884, I have grown the best cabbage for years. My experience is to take air-slacked lime when the worm is eating the cabbage, and also

when the butter-fly is laying its eggs; watch for the young worms, put on the air-slacked lime all over the cabbage when you see them on the cabbage, and you will have a good crop.

Yours truly,

GEORGE TAYLOR.

Scarboro' Junction, Jan. 15, 1885.

CELERY.

I raise a great deal of celery and find good market for it. I find Sandringham and Boston Market the best I have had.

WM. TURLEY.

Lacknow, Dec., 1884.

FRUIT GROWING IN COUNTY OF GREY.

DEAR SIR,—Last summer was a bad year for fruit. We had neither plums nor peaches. Plum trees were badly killed around here. We had not very many apples, but we had a great crop of grapes and cherries. All the plants received from the Association have done well. The Glass Seedling plum is quite healthy.

WILLIAM BROWN.

Annan, Jan., 1885.

VEITCHE'S PERFECTION PEA.

DEAR SIR,—I have read of this and that best pea, but I think they must be out and out best peas that can beat Veitche's Perfection as a fine large table pea, splendid flavor. It is a late pea. I think if it was better known it would be more grown. The only catalogue that mentions this variety in Canada as I see is Bruce & Co., Hamilton. I wish I could get a good early variety of tomato as reliable as the above pea. I have purchased tomatoes from time to time but cannot yet get a reliable early tomato for the cold North.

T. A. H.

Muskoka.

GRAPE VINE FLEA-BEETLE.

In order to lessen the grape vine flea-beetle an excellent plan for this purpose is to provide some fly-paper prepared with boiled linseed oil, etc. These may be placed at the base of the vine, and when the insect is disturbed the natural course of protection is the ground, and by this means is very easily captured.

This plan may be very effective for only a few vines, but may with ingenuity be applied on a large scale by placing the papers on a stretcher and moving along from vine to vine.

Berlin, Jan., 1885.

R.

MASSACHUSETTS HORTICULTURAL SOCIETY.

Programme of Meetings for Discussion during the season of 1885 :

- Feb. 7.—Methods of Fruit Growing, by Prof. S. T. Maynard, Amherst.
- Feb. 14.—Garden Flowers, by Mrs. T. L. Nelson, Worcester.
- Feb. 21.—Discussion on such subjects pertaining to Horticulture as may be suggested.
- Feb. 28.—The Leaf as a Study, by Dr. G. Austin Bowen, Woodstock, Con.
- Mar. 7.—Propagation of Trees from Seeds, by Jackson Dawson, Jamaica Plain.
- Mar. 14.—Nomenclature of Fruit, by Hon. Marshall P. Wilder, Boston.
- Mar. 21.—Heating Greenhouses, by Joseph H. Woodford, Newton.
- Mar. 28.—A Comparison of Manures for the Orchard and Garden, by Prof. G. C. Caldwell, Ithaca, N.Y.

The meetings will be held at Horticultural Hall, Tremont Street, Boston, at 11 o'clock. All interested are freely and cordially invited to attend.

THE YELLOW TRANSPARENT APPLE.

The tree is a free and symmetrical grower, upright when young, but spreading as it becomes older under the loads of fruit. The bark is of a light cinnamon color, almost yellow on the young wood, and the leaves are light green, being slightly pubescent, and whitish beneath. It is a healthy tree, and like most of the Russians. "iron-clad" against cold, enduring 40 deg. below zero without injury. It is a heavy bearer annually in rich gardens, but biennially on poorer soils, or in sod. The fruit, fairly grown, is medium in size, though specimens that would rank as large may often be found on young trees in good soil. But the tendency to overbear is likely to make the fruit small when not thinned, especially on poor soil. The tree is of dwarf growth, and, when branched low, nearly all the fruit may be gathered by hand, even from an old tree. My oldest trees (15 years old) have little fruit out of reach.

In delicate, waxen beauty, the Yellow Transparent, especially when allowed to mature upon the tree, is unequalled among American apples. It is soft-fleshed, and of a mild, delicate, but not very high flavor—not equal to the Early Harvest. But the fruit is always fair, and its attractive appearance, joined with its very good quality, makes it extremely saleable. As an early market apple, it has great merits. If gathered just as the seeds begin to color, it bears transportation well, and will keep two weeks or more, before showing any signs of deterioration. How far south it will succeed, I cannot say; but have no doubt that in the mountains it may be successfully grown nearly down to the latitude of New York city.

There are at least two other Russian apples which are nearly, if not quite, identical with the Yellow Transparent. I have them growing and bearing in the

same orchard, and cannot distinguish any positive difference in tree or fruit. These are the Grand Sultan and the Charlottenthaler. The Grand Sultan does not appear to be quite as hardy a tree as the other two, or perhaps I should say not quite so healthy, being subject to bark-blight upon the trunk, by which the young trees are destroyed. I have in one place two parallel rows of Yellow Transparent and Grand Sultan, set nine years ago. The first are all perfect, but of the latter two-thirds have died from bark-blight. The remaining trees of Grand Sultan, however, cannot be distinguished in any way from their neighbors. The Charlottenthaler was at first thought to bear larger fruit than the Yellow Transparent; but my experience with the trees as they get older does not sustain this belief. The young trees of all three often bear very large apples, but as they get older they all come to about the same size.—J. H. HOSKINS, M. D., in *Rural New Yorker*.

FAMEUSE SUCRE.

This "Sugared Fameuse" is an apple in which I have been very much interested since I first saw it, some six or seven years ago. In quality for dessert I consider it the best apple I ever met with, decidedly superior to Pimate, Garden Royal, Early Harvest, Early Joe, or any of the highly and justly admired American dessert Apples. In size it is about with the Fameuse, but more flattened. In color it is a dark rosewood red, with a thick, firm skin. It is in eating all through October. The flesh is white, tinged with red or pink, in quality soft, perfumed, and of an indescribable luscious flavor, more like some imaginary tropical fruit than an apple. It is not sweet, having a decided but delicate acid, yet shot through with a fine, sugary sweetness and spiciness that must be tasted to be understood, but is something like strawberry

ice cream. The tree is as hardy as Fameuse, an early and excellent bearer, and the fruit is even and fair. If known in our cities it would easily bring ten dollars per barrel.—J. H. HOSKINS, M. D., in the *Home Farm*.

SAPIEGANKA PEAR.

BY PRO. J. L. BUDD, IOWA AGR. COLLEGE.

The impression prevails that the pears of Russia are coarse and unfit for dessert use. With a view to removing this impression I send another note from Mr. H. Goggener, of Riga, Russia, on the pear bearing the above name. In many places in Iowa it has shown its ability to carry healthy foliage during our changeable summers and to endure our recent test winters:

“This is a pear from Lithuania, and probably comes from the gardens of the family of the Prince after whom it seems to have been named. It is found generally in Lithuania and Poland. It is also found in the countries belonging previously to Poland; and attains its highest point in the Government of Vilna.

It has not, as yet, been described in the works on German Pomology, and is not known in other countries. In the Baltic Provinces it is known as the Courland Bergamot, or Round Bergamot. In form it is like a Bergamot, decreasing towards the stem; towards the calyx it is more flattened, and may be mistaken for the Summer Bergamot. The color is green when on the tree; later, light yellow, with red cheeks if exposed to sun. It has many marked dots, and is russet only at the calyx and stem. The flesh is yellowish-white, juicy and of fine Bergamot flavor. It should be gathered early in September. It is a good fruit for shipment, and in the markets always meets with a ready sale. The tree grows to a large size, usually healthy. As it seldom suffers from frost when blossoming, it usually bears

every year. It does not seem to suffer from underground water, but does poorly in sandy soil. The leaves are round, shiny and leathery, on long, red stems. This is one of our best fruits. It can be used for all purposes, and therefore should be generally cultivated—*Prairie Farmer*.

ONTARIO'S CHOICE FRUIT.

MAGNIFICENT COLLECTION OF APPLES FOR THE WORLD'S FAIR AT NEW ORLEANS.

Prof. William Saunders, the well-known entomologist of this city, is at present engaged in preparing for shipment a collection of apples designed to represent at the great world's fair in New Orleans some conception of the resources of Western Ontario as a fruit-growing district. It will be remembered that in consequence of the apathy displayed by the two Governments in regard to having a good representation at this exhibition, the directors of the Ontario Fruit Growers' Association determined to send a collection of fruit that might in some degree do credit to the Province. Mr. Saunders entered into the project with his characteristic energy, and with the assistance of Mr. J. M. Denton, a grand success has been achieved. Through the medium of the press voluntary contributions of choice fruit was solicited from the western district, and the response has been a liberal one; in fact Mr. Saunders expresses his conviction that the assortment of apples is one of the finest and most complete that he has ever seen. The best fruit is being arranged into fifty distinct varieties—four of each kind being included therein—besides which there are samples comprising twenty-five, ten, five, and single varieties respectively. In addition, two or three bushels of good fruit will be sent for the purpose of assisting in decorating the tables and enlarging the display. Extra apples of each kind, of the

choicest varieties, will be forwarded, so that any fruit injured en route may be promptly replaced. The collection is now being carefully packed, and will be shipped to its destination not later than next Monday. There is no doubt that this magnificent display will reflect much credit on the western district, and it is a cause for congratulation that the city possesses a gentleman of such enterprise as Mr. Saunders.—*London Free Press*.

LE CONTE PEAR.

A gentleman residing in Florida writes to the *Country Gentleman* that this pear, by its superior vigor, rapid growth, early bearing and abundance of fruit, which sells at satisfactory prices, is making for itself a reputation second to no pear before the public. He says: I can show your readers trees one year old from the cutting—we raise them all from cuttings—cut back to two feet last winter, that are now (Sept. 1st) twelve feet high, with from four to six branches, and larger trees with proportionate growth. Some idea of the size of a fruiting tree of twelve years old may be obtained from one I lately measured: Spread of branches, 35 feet; height, about 20 feet; circumference of trunk, one foot above the ground, 42 inches. Another, of the same age, produced 45 bushels of fruit, which sold on the tree for \$26 before it was gathered. The fruit sold from here this season, in New York and Boston, for \$2.75 to \$5 per bushel. It improves in quality with the age of the trees. Some of the best nurserymen in the South think that growing the Le Conte here will, in the near future, revolutionize pear growing, using it for a stock for others. One thing is certain—we can now, with the Kieffer following, have pears for home use from June to October in abundance, and

one of the most profitable market pears known.

We desire to caution our Canadian readers by telling them that this pear tree will not endure our climate.

PERMANGANATE OF POTASH AS A PLANT-FOOD.

A writer in the *London Garden* gives the following interesting account of his experiments with permanganate of potash as a fertilizer:—

“I had been using a solution of this for some time as a deodorizer and disinfectant, and as such recommended it to a friend. For convenience sake he kept the liquid in an old watering-can in the potting-shed, near to which was growing a houseful of pelargoniums in pots. It happened one day that a very young practitioner watered the plants on one side of the house with it; dire results being, of course, anticipated. Such was not the case, however, but quite the reverse, for the dosed plants showed increased instead of diminished vigour. I at once commenced a series of experiments, using an unvarying strength of as many crystals of permanganate as covered a six-penny piece to a gallon of water for watering the soil with, but for over-head syringing using double the quantity of water. Rare ferns in a Wardian case four feet by two feet have been syringed once a week for some time with this, and are to all but myself a mystery of luxuriance. From fuchsias to fuchsias, aspidistras to adiantums, tender grasses, seedlings in pans, and roses in pots—all without exception seem to derive much benefit from its administration. In order to ascertain its fatal strength, I planted two plants of *Tropæolum aduncum*, one in sand saturated with a strong solution repeatedly passed through it, the other in the liquid itself, covering the surface with cork to

keep the roots in and light out. Both plants are alive and vigorous after two months.

"Both manganese and potash, the components of permanganate of potash, are essential fixed elements in the structure of plants. Manganese occurs in small quantities; and, although its beneficial properties have not yet been definitely ascertained, it is doubtless taken up by the rootlets in solution with other matters. Of the absolute necessity of potash for plant-food there is not a shadow of doubt. In short, it is essential to the life of a plant, and there seems to be no end to its power of combining with other substances, in most cases rendering matters solvent and assimilable which without its aid would have remained useless. The liquid permanganate of potash certainly looks a very risky thing to water plants with; but it is not so, for adiantums dipped overhead in it gave no unfavourable result. Poured through a pot filled with pure sand, it filters through as pure, colourless water of beautiful softness. For flowers in vases it is evidently good; the water does not require changing or become offensive, and the plants preserve an unusual freshness and vigour. I have used it for some time in a glass button-hole holder, and the flower-stalks seized and absorbed the colouring matter in about an hour. This was especially the case with yellow flowers. Overhead watering with this liquid is disastrous to our common enemy, the green fly."

APPLES IN THE LONDON MARKET.

Keeling & Hunt, at Monument Buildings, London, England, on 30th December, 1884, reported the following sales, viz:—Choice selected Greenings, 10s. 6d. sterling; Baldwins, 14s. 6d.; Roxbury Russets, 10s.; Golden Russets, 12s. 6d.; Ribston Pippins, 13s. 6d.

THE YELLOWS.

The *Gardeners' Monthly* notes the success which has attended the experiments of a Mr. Miller in staying the ravages of the "yellows," or a kindred disease, which attacks the Rhododendron, Norway Spruce, White Pine, and other things, by the application of sulphur to the roots. "That the fungus which causes the peach yellows," says the editor, "is the same as that which works injury in other cases has been positively proved by experiments recorded in our pages, where a spadeful of soil near a diseased peach tree permeated by the fungus spawn, placed around a Norway Spruce produces the disease in that tree also, and a microscopic examination of the two fungi shows them to be the same. A species of fungus ferment seems to permeate the whole tree after these attacks, and buds taken with the ferment fungus in the tissue and used for inoculating other stocks will spread the disease. Even seed taken from such diseased trees carries a portion of the ferment with it, and the disease is spread in other directions." The editor then refers to a visit to Mr. Miller, the consulting landscape gardener, of Fairmount Park, N. Y., and says:—"Every practical gardener knows that sulphur is always fatal to the lower organisms, though wholly innocuous as against the higher forms of life, and it required only the suggestion to use that on fungus below ground, which had been found so effectual on fungus above. The sulphur application was quite as effectual here, and Mr. Miller was quite enthusiastic as he pointed out his Rhododendrons and Pines, once so thoroughly disease-stricken that most gardeners would have at once committed them to the flames, now as green and healthy as the best. The only wonder is that no one has thought to try sulphur on the root fungus as a remedy for the

'yellows' before. Probably it has come about because those who have suffered are chiefly among those who have no regard for those who are 'fungus-mad,' and who are quite sure that nothing is known regarding the disease. For our part we regard the successful experiments of Mr. Miller as entitling him to a wide appreciation by his fellow-cultivators."

CARE OF SCIONS OF THE STONE FRUITS.

A student came to me to-day with a copy of the *Rural* and directed my attention to your advice to E. K. T. in a late issue. Said he:—"Our class notes say pack all scions in dry forest leaves."

The subject is worthy of more attention and careful experimentation than it has yet received. An experiment like the following will be conclusive:—Pack away a bundle of cherry scions in November in moderately moist moss in a moderately moist cellar. In January use these for putting up say 500 root grafts. At the same time and with the same roots put up 500 grafts with scions of the same variety packed in November in dry leaves in a box in the same cellar. Set by the same man in similar soil, it will always happen that the stand will be from twenty to fifty per cent. better with the dry scions. If the scions be used for top-grafting or crown-grafting in the open air the difference in the stand will be far greater in favor of the dry scions.

My attention was first called to this subject in March, 1870. The cherry scions I was using in top-working were cut in November and kept in the cellar in quite dry moss. They were nice and plump, with a show of callousing at the base. I was sure they were in fine order, yet less than five per cent. of them grew. The same day it happened that I put in a dozen or more scions received by mail from the old homestead

in New York. These were so dry that the bark was shrivelled, and I only expected to save the variety by the possible growth of one or two specimens; but they all grew. Since that time I have experimented largely with the stone fruits, and am certain that the scions should be kept as dry as is safe. In all cases—unless the scions be scarce and valuable—they are thrown away if they show the least trace of the starting of a single bud or of callousing at the base.

The principle involved is the reverse of our attempts to graft the cherry after the water coming up from the roots has commenced to change the starch of the cell structure of the stock into sugar water. If we expect a uniform and satisfactory union of scion and stock both must be in dormant condition. The scions of the apple and pear do not absorb water so readily; yet with these I have known many poor stands to result from the use of water-soaked scions.—PROF. J. L. BUDD, in *Rural New Yorker*.

AMMONIA FOR FLOWERING PLANTS AND STRAWBERRY PLANTS.

A writer in the *London Gardeners' Chronicle* says:—Last year I was induced to try an experiment in chrysanthemum growing, and for this purpose purchased one pound of sulphate of ammonia, which I bottled and corked, as the ammonia evaporates very rapidly. I then selected four plants from my collection, putting them by themselves, gave them a teaspoonful of ammonia in a gallon of water twice a week. In a fortnight's time the result was most striking, for though I watered the others with liquid cow manure, they looked lean when compared with the ammonia watered plants, whose leaves turned to a very dark green, which they carried to the edge of the pots until the flowers were cut. As a

matter of course the flowers were splendid. The ammonia used is rather expensive, as I bought it from a chemist's shop; this year I intend getting agricultural ammonia, which is much cheaper. I have also tried it on strawberries with the same satisfactory result, the crop being nearly double that of the others. It is very powerful, and requires to be used with caution.

NATIVE AND FOREIGN CHESTNUTS.

Among the later novelties in the way of chestnuts the Japan varieties are well worthy of attention. They are probably of the same origin as the common European chestnut, although some of our botanists claim that they belong to a distinct species, to which the name of *Castanea Japonica* has been given. But whether originally from the same species or not, the Japan varieties, or at least the kinds that have been introduced, appear to be far more hardy and productive than the varieties usually imported from Europe. The trees grow rapidly when worked on stocks of the American chestnut, and usually commence bearing when three or four years old. One of the first varieties introduced produces a large nut of a rather light mahogany colour, with quite distinct dark lines running from base to apex of the nut. The leaves of this kind are also quite distinct, being narrower than the ordinary European chestnut, and of a pale yellowish green, the underside being covered with a whitish pubescence. The quality is also good for so large a nut, but not quite so sweet as the best of our native varieties. Another Japanese chestnut, of which I have seen only a few specimens, has from four to eight nuts in each burr, the more usual number being six. As might be expected with such a number of nuts

crowded into one burr, they are not of a uniform size or shape, and the centre one is often of a triangular form resembling a large beechnut. There are usually three or four large nuts in each burr, and the others smaller and of an irregular shape. The trees of this curious variety are very hardy and wonderfully prolific. Three nuts in a burr appears to be the normal number for the chestnut, but it is not a fixed number either in the cultivated or wild species of this country, at least; for in the Chinquapin (*Castanea pumila*) the nuts are mainly solitary or one in a burr. We really do not know but this is merely a variety that has been produced from the larger or sweet chestnut of our northern forests. The Chinquapin is a smaller tree—in fact in some parts of the South where this species is indigenous, it is sometimes only a small shrub, bearing abundantly when but three or four feet high.—A. S. FULLER, in *American Agriculturist* for February.

PROFITABLE GARDEN CROPS.

Wherever there are manufacturing villages, early cabbages are always in demand, and bring good prices. Spinach is another saleable vegetable. Beets, parsnips, carrots, turnips, onions, etc., as well as spinach, may be sown in rows far enough apart, to be worked by horse implements. The distance between the rows is to be governed by the width of the horse-hoe or cultivator, which should close up as narrow as twenty inches. A market-gardener sows such crops twelve or fifteen inches apart, but the farm-gardener has cheaper land, and can give more space if he can save labor, and substitute horses for hands. Those who propose to undertake farm-gardening, will do well to begin with sweet corn and early potatoes, and not undertake other gar-

den-crops until the land has been in cultivation with these for one season. Another way to prepare the land for garden crops is, to plough, harrow, and sow it to buckwheat. When this is in flower, plough it under, and sow it again to buckwheat. Turn this under at the proper time, and in September, or at the usual time, sow the land with rye, to be plowed-in next spring. The object should be to bring the land, a few acres at a time, into condition to raise any garden-crops. The rapidity with which this can be done will depend upon the amount of manure at command for the purpose. It will be worth while for all farmers, who are within easy reach of a market, to give this subject proper thought, and be ready to commence the coming spring to make a farm-garden. —DR. THURBER in *American Agriculturist* for February.

THE BEST AUTUMN-FLOWERING SHRUBS.

If we had to name the best spring-blooming shrub, a first choice among so many beauties, might be hard, but among fall-bloomers the *Hydrangea paniculata grandiflora* stands supreme above all competitors, and, considering its many excellent qualities, it seems strange that it is still comparatively rarely found in cultivation. For small inclosures it is rather large, and not as well adapted as for large, open lawns, where its effect, especially when seen from a short distance, is really grand.

In a neighboring lawn, in full view from the window near which we write, and several hundred feet distant, stands a group of half a dozen large bushes in full bloom, completely covered by their large panicles of white and rosy pink. A superb specimen of *Abies Nordmanniana*, with its deep-green, glossy leaves, furnishes a splendid back-ground; on one side stands a *Magnolia macrophylla*, which by the slightest breeze turns the

under side of its monstrous leaves to view, giving a peculiar shining, glaucous tint to the entire tree. A little further distant on the other side, is a beautiful, well-shaped Kentucky Coffee-tree, the tips of its branches just changing to golden yellow in pleasing contrast to the bluish-green of the main foliage. It would be useless to attempt to describe in words the imposing effect of this magnificent combination of rich colors and graceful forms, which, we fear, shows to better advantage from our window than from the proprietor's own grounds.—*Am. Garden.*

FARM-GARDENING.

The farmer who continues to raise the same crops that he grew before towns and manufacturing villages sprang up all around him, makes a great mistake. In the older States, at least, there are but few farms not within an hour's or two hours' ride of a market. It is worth while for farmers in such localities, to consider if they can afford to raise field corn, when sweet corn will pay them much better. It is true, that sweet corn needs high manuring, but when the ears are off, there will be a heavy crop of the very best fodder. The ears will bring in ready money, just how much will depend upon the market, but safe to say, more than any crop of ripe corn would be worth. It is a mistake to grow late potatoes, to be dug when every one else has potatoes, and prices are low, while early potatoes will bring several times the price of late ones. It is so with other crops. There are but few garden vegetables that may not be grown as farm crops, and it is a mistake to raise produce that will bear transportation from a distance, instead of that suited to a near market, and must be disposed of at once. A farmer, on the other hand, would make a mistake, were he to devote his land to a

new set of crops at once. He should determine to grow those things that pay the best, and to gradually work into a more profitable kind of farming. Those who propose to do this, will find sweet corn and potatoes excellent crops to begin with. Others will pay better, but these are best to prepare the land for other and more profitable crops. It would have been better had the land been prepared for these last fall, but as this was not done, make it ready as soon as it is safe to work it.—*American Agriculturist*.

THE CONCORD AND OTHER GRAPES.

Newport, Vermont, is in about the same latitude as Kingston, but without the ameliorating influence of the water which Kingston enjoys. Doctor Hoskins writes to the *Rural New Yorker* as follows :—

“Here the Concord ripens about once in five years, while the Salem is fit to eat every year, and ripens well two years in three. Salem has one advantage over most grapes, in being quite eatable before it is ripe. But I begin to think both Merrimack and Massasoit would have been preferred to Salem if they had become well known sooner. They are both a little earlier than Salem. But our earliest good grape is Brighton. If it would keep like the three Rodgers' grapes named, I would grow that only. Long-keeping grapes are as valuable as long-keeping apples, and that is where Vergennes takes 'the whole bakery;' but it is too late here.”

GREGG RASPBERRY.

Purdy's Fruit Recorder says of this black raspberry :—“This year's experience has satisfied us that there is no black raspberry grown in this section, and especially on our grounds, that will yield equal to, and such uniform large berries, as the Gregg. Our pickers can pick, on an average, the season through, two quarts of them to one and one-fourth quarts of any other sort, and the

reason for this is they hold out large to the last picking, and, too, withstand drouth better than any other sort. Show us where an acre (we don't mean an acre estimate by a few rods' yield) has yielded one hundred bushels of fruit, as have the Gregg's. Persons living in sections where land is flat and needs draining, and where Tylers will stand and Gregg's have been killed back some, can of course tell about 'Tylers yielding as much as the Gregg,' but it's not true with us.

“The Tyler and Hopkins are both splendid sorts, and we shall set heavily of all three.”

PLUMS FOR A COLD CLIMATE.

A gentleman residing near Portland, Maine, asks the editor of the *Home Farm* for the best varieties of plum for him to plant in his locality, to which inquiry Mr. S. T. Cannon replies :—For an orchard of 100 trees I would recommend the following sorts : Lombard, 25 ; Imperial Gage, 20 ; Bradshaw, 15 ; Yellow Egg, 10 ; Gen. Hand, 8 ; Jefferson, 6 ; Shropshire Damson, 5 ; Fellenberg, 5 ; Monroe, 4 ; Mooers' Arctic, 2. The first five named in the above list are old, popular, and well known sorts. The Shropshire Damson is esteemed for its preserving qualities. In regard to the Mooers' Arctic, I think it not so good as most other kinds, below medium in quality ; its chief merits are its earliness in coming into bearing and earliness in ripening.

TULIPA GREIGI.

Of all the known species of tulip this is perhaps the most showy and desirable as a garden plant. It blooms freely in April or May, its large goblet-shaped flowers being generally of a vivid scarlet color ; but there are also purple and yellow flowered forms. The bulbs are so extremely hardy that they will withstand with impunity freezing and thaw-

ing, and even when the leaves are half-grown they will endure a temperature as low as zero without any protection. The plant is a vigorous grower, attaining a height of from nine to fifteen inches, and bearing flowers from four to six inches in diameter, when fully expanded; and three or four lance-shaped glaucous leaves, with undulated margins, the whole of the upper surface being boldly blotched with purple or chocolate brown. Varieties occur without spots; and others with yellow and spotless flowers. It grows freely in any light rich soil, in an open sunny position, and rarely requires transplanting. Any one who admires handsome flowers should not fail to get at least a half dozen bulbs.

EARLY RICHMOND, OR KENTISH CHERRY.

Doctor Hoskins says, in the *Rural New Yorker*, "that at Newport, Vermont, the tree is hardy enough to grow to a large size, but it seldom bears, the bloom being heavy, but a slight chill—less than frost—prevents the fruit from setting. By the way, will some reader give his experience (as far north as possible) with Lieb, Large Montmorency and Ostheim?"

We would emphasize the Doctor's request and ask our readers to tell us what success they have met with in fruiting the Lieb, or the Large Montmorency, or the Ostheim. If our readers will refer to page 166 of the Report of the Fruit Growers' Association for 1880, they will find that, at Lindsay, Mr. Beall says the Kentish Cherry grows well, and blossoms, but will not set much fruit, and that what does set falls off when about the size of peas. If a light chill, less than frost, will prevent the fruit from setting, it may be that a similar chill is the cause of the premature dropping of the fruit.

BOOKS, &c., RECEIVED.

SCIENCE, an illustrated weekly, published by the Science Company, at 4 Bond Street, New York, for \$5 a year, devoted to scientific subjects.

CANADIAN BREEDER is published weekly, at the corner of Church and Front Streets, Toronto, S. Beatty, manager, at \$2 a year. It is devoted to the stock and farming interests of Canada, more especially in the live stock department.

FLORAL CABINET is a magazine of floriculture and domestic arts, published monthly, at 22 Vesey Street, New York, by the Ladies' Floral Cabinet Company, at \$1.25 a year, or it may be had in connection with the *Canadian Horticulturist* at \$1.80 a year for the two.

AMERICAN GARDEN, an illustrated journal of horticulture, published by E. H. Libby, Greenfield, Massachusetts, at one dollar a year, is edited most ably by one of the most interesting of horticultural writers, Dr. F. M. Hexamer. You can obtain a specimen copy on application to the publisher, and be able to see how good it is for yourselves.

VICKS' ILLUSTRATED MAGAZINE is always full of information for every one who is interested in the cultivation of flowers. The New Year number is very handsomely illustrated with a colored plate of *Canna Elhemanni*, and numerous engravings. It is published monthly by James Vick, Rochester, N. Y., at \$1.25 a year, or will be sent with the *Canadian Horticulturist* for \$1.75, for both magazines.

GARDENER'S MONTHLY is a well-known standard publication, now in its 27th volume, published by Chas. H. Marot, 814 Chestnut Street, Philadelphia, Penn., at \$2 a year. It is still edited by Thomas Meehan, so long and so favorably known as both a scientific

and a practical horticulturist. More need not be said to denote the character and value of this publication to all who would keep abreast of the times in horticultural matters.

SCIENTIFIC AMERICAN is devoted to the dissemination of information in relation to art, science, mechanics, chemistry and manufactures. It is very fully illustrated and of especial value to every one interested in the mechanic arts. Published weekly by Munn & Co., 361 Broadway, New York, at \$3.20 a year; by arrangement with the publishers, we can supply it with the *Canadian Horticulturist* for \$3.50 a year for both publications. See advertisement in this number.

THE AMERICAN AGRICULTURIST is a monthly periodical of established reputation, devoted to agricultural pursuits, published by the Orange Judd Company, at No. 751 Broadway, New York, for \$1.50 a year. It is ably conducted, and numbers among its regular contributors some of the best and most practical agricultural writers of the United States. We club this with the *Canadian Horticulturist* at \$2.00 a year for both papers, and for \$2.40, the "Agriculturist Family Cyclopaedia," a valuable work of reference and general information, will be sent in addition. See advertisement in this number.

SOUTHERN CULTIVATOR AND DIXIE FARMER.—We are in receipt of the January number of this sterling Agricultural Journal. It has been changed in form, being made more compact—magazine size—and can be handled with greater satisfaction and preserved in better condition than the old form. This issue numbers over seventy pages, and in quantity it is ahead of any agricultural publication that comes to our office, while in quality it is the only journal of the kind that is fully adapted to the needs of Southern

farmers. The very best Southern talent is employed in its columns. The "Thoughts for the Month," and the "Inquiry Department," are alone worth the subscription price. The paper has pages for special departments of farm work, and they are full and interesting. Without enumeration of the excellencies of this magnificent journal, we advise each and every one not a subscriber, to send \$1.50 to Jas. P. Harrison & Co., Atlanta, Ga., for a year's subscription, or if they prefer, we will send our paper and *The Cultivator* one year for \$2.15.

EDUCATIONAL WEEKLY, published by the Grip Printing and Publishing Company, at \$2 per annum, is devoted to the educational interests of Ontario, and will receive a hearty welcome from all those that take an interest in the education of the youth of our Province. We have been very fond of boasting of our system of education as unsurpassed, and flattering ourselves that we had attained to perfection in educational matters. This is far from being the fact, however. Our educational system is very faulty, and needs the careful attention of our educationists. We are wasting the time of the average child on things of no practical use. Careful and well considered reforms are very greatly needed, and a decidedly more practical turn given to the common school instruction of our children to fit them for the battle of life. To do this, we will have to reform our Normal Schools, and fit our teachers for the work they should do, for we submit that our teachers have not been properly instructed in the true object of teaching, namely, to fit boys and girls for the realities of life in this eminently practical age. How far this new Canadian publication will contribute to the accomplishment of much needed improvements, remains yet to be seen.

"THE EMIGRANT'S NEW YEAR."

Fare-weel to the year that's fast wearin' awa',
Fare-weel to its poorthit and sorrow.
The fortune it brought, wae's me was but snail,
The new ane may glut on us to-morrow!

Last year I was hame on my ain heather hill,
In our wee theekit house by the burn,
Mang neighbors I lo'd, an' lo'e them a' still,
An' I'm deelin' o' grief to return!

I ken they a' wish me a Happy New Year,
And speak o' the friends far awa';
But little they ken o' what I thole here,
Or the heart that is burstin' in twa'.

Oh, why did I leave our sung "But an' Ben,"
Our bonnie kail-yard and the Smiddy?
Or what g'd me sell, to help us out here,
My twa granic kye an' the cuddly?

Had I the wit then I think I ha'e noo
I wadna be s'bbin' an' murdin',
But dark days may brighten ere the next year is
through,
It's "a lang lane that hasna' a turmin'."

The Lord has been kind to spare my guid-man
Through sickness that tell on his sair,
He weighs a' our burdens, an' wunna' lay on
But just what He kens we can bear.

There was plenty o' room in our ain native soil
For John an' the callants an' me,
And John and the callants were willing to toil
If the laird had just let us a-be.

But the laird o' the manor maun hae braw hunting-
grunds,
And car'd mair for his "game" and his "deer";
He wanted the Land for "Preserves" an' his hounds,
And expatriated us here!

They say the "guil folk" will make hames for the
poor,
God send it were this very day,
For wi' strugglin' sae hard, wi' "the wolf at the door,"
Like the year we're fast wearin' away.

Oh, if they'd begin what they said they would do,
An' no dandle, but "do with their night,"
Many blythe hames where dark forests grow
Would shine in God's blessed sun light!

And my three bonnie laddies wh' weary an' yammer,
An' greet for their parritch an' kail,
Would dance at the sound o' Dad's auld smiddy ham-
mer—
It's for them I am makin' this wail.

Yes; Georgie an' Jamie an' Sandy will grow
Brave men, an' stalwart in body an' mind,
And pride whispers fondly auld Scotia may know
What she's lost by losin' sic men o' their kind.

Hope bids me cheer the coming year
May ch use a' our sorrows awa',
And the joy it may bring will gar the "bush" ring
Wi' praise frae the hearts o' us a'.

Montreal.

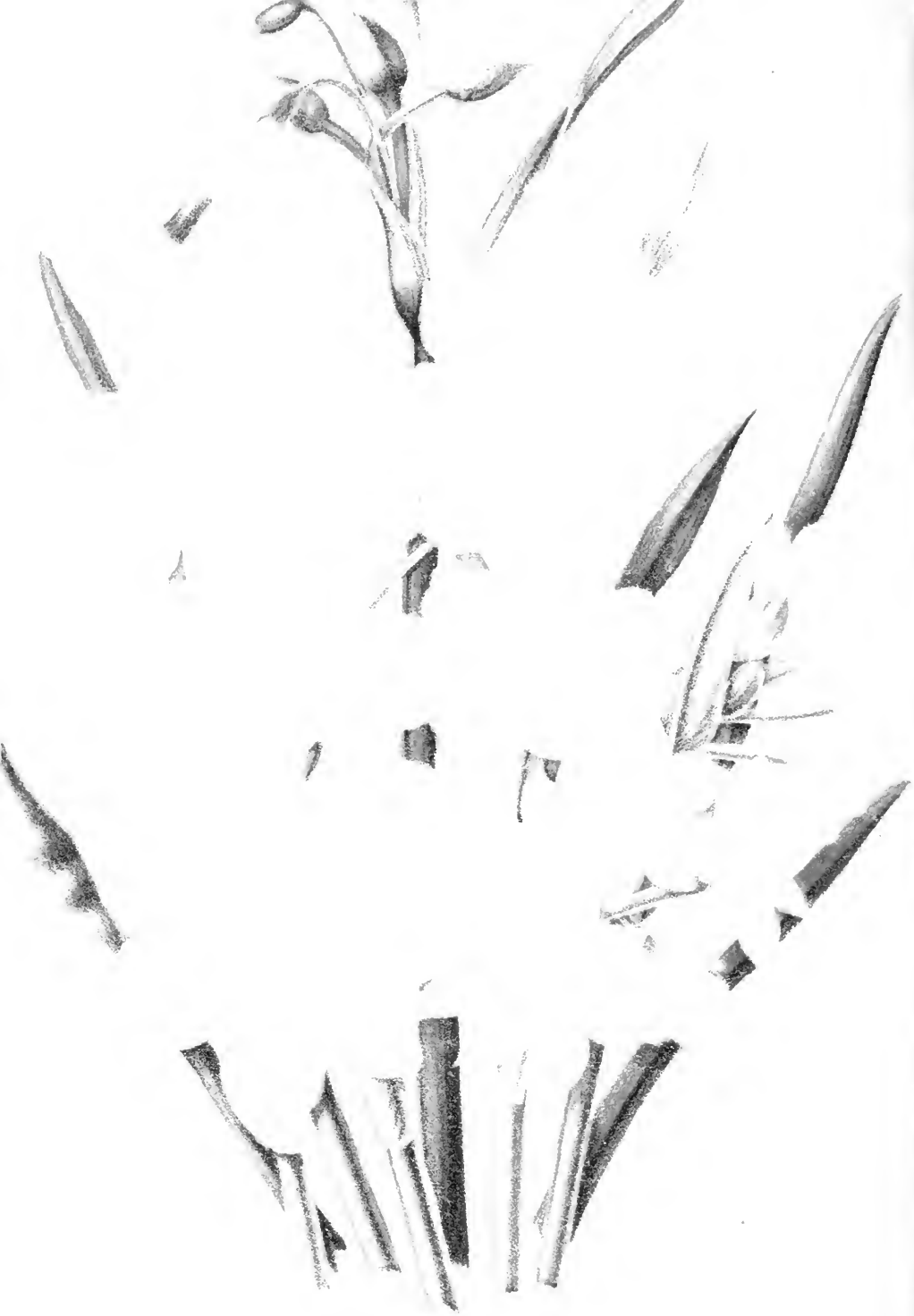
GRANDMA GOWAN.

SHAFFER'S COLLOSSAL.—The season for this monster raspberry is about the same as the Gregg Black Cap, and the product about twice as much. Our row of two-year-old plants is a wonder indeed. The

bushes stand full six feet high, and heavily loaded with fruit. The size is sustained after all suitable nipping and cutting back has been done; the bush being perfectly hardy and sufficiently sturdy and strong to withstand winds. They should be planted about eight feet by four; 1,360 plants to the acre. They have the red raspberry flavor to a large degree, particularly if picked in the red stage. When fully ripe they form a reddish purple, the proper condition for the table, when they are generally well liked; but for market or evaporating they should be handled when red. As they fill the place of the red sorts very well for common use, and perfectly so for evaporating, they are coming into very general use and demand. The evaporated article is produced at much less expense of time and amount of fruit, and is of excellent quality, hence marketable at paying prices.—Robert Johnson.

KEEPING WATERMELONS AND SQUASHES.

—We ate the last of our watermelons Dec. 8th, a large one, a descendant from seed brought from Virginia a dozen years ago or more. This fruit, as usually managed, lasts only three or four weeks in the Northern States. The season may be prolonged through October and November with a little painstaking. Specimens for late use should be picked about a week before they are in their best eating condition, carefully handled, and placed in a cool dry room, where there will be no danger of frost. By the first of October they should be packed in dry saw-dust; clean, dry hay, or cut straw; kept in a dry room and used as wanted. The old-fashioned way of keeping crook-necked squashes, hanging up in the kitchen by a loop of woolen listing, is still in use, and is effective when the room is safe from frost. When the coal is not suffered to go out, they keep well through the winter. The Hubbards and the Marbleheads are good keepers under similar conditions. Where there are closets against the chimney, these and other hard-shelled squashes keep well. The great secret of success is in very careful handling. As a table vegetable, and in pies, these winter squashes are hard to beat.—WM. CLIFT in *American Agriculturist* for February.



NARCISSUS.

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THE NARCISSUS.

The times change and we change with them. We seem even to tire of beautiful and pleasant things, and put them away because they cease to interest. Flowers become old-fashioned, and in our love of new things the old-time favorites are neglected, and for a while forgotten. But by-and-by memory recalls her long-forgotten joys, and we go back again to our old favorites, and plant anew the neglected flowers. Thirty years ago nearly every garden had its clumps of daffodils, jonquils and narcissus. And now, after many years of neglect, these old-time favorites are being sought for again. Exhibitions are held expressly to display their beauty and scatter their fragrance. Attention is being called to their many excellencies, and for a time they will be again planted and admired; and we shall wonder that we could ever suffer them to die out.

The pretty colored plate which enriches this March number will recall familiar loveliness to many of our readers, while to others, doubtless, it will possess the charm of novelty. To which will be given the greater pleasure; to those who look upon these flowers with curious interest, feeling

that there are in store for them new sensations of delight in watching their unfolding beauty and inhaling their delicious fragrance for the first time; or to those in whose hearts deep memories are stirred, to whom they speak "of life's morning march, when their bosom was young," of the home of their forefathers and the friends of early days? Ah! well, let there be joy to both and to all in the culture and the gathering of these spring-time flowers, we need not question whose is the richer if so be that the cup of each is full.

Our plate represents three varieties of narcissus. The largest flower, with the bright pink or bright scarlet edge upon the crimped crown, is known as *narcissus poetica*, or the poet's narcissus. It is generally esteemed the most beautiful. The large petals are of the purest white, the small crown in the centre is of a light yellow, edged with very bright pink. The flowers are very sweet-scented. The bulbs may be planted in clumps in the garden, in rich friable soil, and allowed to remain undisturbed for several years. Eventually the bulbs will become too crowded, when they should be lifted, after the leaves have died down, separated and re-planted in

fresh soil. The flowers appear about the end of May. They give a bright, cheerful appearance to the vase or table bouquet, and fill the room with delightful odors. This species is a native of the South of Europe, but is sufficiently hardy to endure our climate.

The two other flowers, one of them double and the other single, belong to the species known as the paper-white narcissus, *N. papyraceus*. They are both very fragrant and exceedingly desirable for window culture, but are not sufficiently hardy to endure our climate in the open border. These bulbs may be planted in a five-inch pot, in rich, friable soil, with plenty of drainage in the bottom of the pot. They should be planted deep enough to bring the neck of the bulbs just at the surface. After planting, water sufficiently to moisten the earth thoroughly, and then set the pots away in a cool, dark place, until they are filled with roots. This will take place in about three weeks. When the soil in the pots is well filled with roots, they should be brought into the light and kept in a temperature as near sixty degrees (Fahrenheit) as possible. If the heat be much greater, the flowers will not be so well developed. As the plants grow they need watering, just often enough to keep the ground moist. The beauty and fragrance of the flowers will amply repay the care required.

There are many other species and varieties of narcissus. Johnson, in his "Gardener's Dictionary," enumerates upwards of ninety. The two-flowered narcissus, *N. biflorus*, so called from its

producing two or more flowers on each stem is also perfectly hardy in our climate. The flowers are white or pale straw color, with a short, yellow crown, having a white rim, and very fragrant.

N. bulbocodium is the handsome hoop-petticoat narcissus, known in France as "Medusa's trumpet." The flowers of this species are bright yellow, the cup is very conspicuous, widening rapidly toward the brim. It is a native of Portugal, and needs a light protection of leaves in winter and to be planted in a sheltered situation.

The jonquil, *N. jonquilla*, produces bright yellow, fragrant flowers, two to five on a stem. It is quite hardy and thrives well both in the open border and as a window plant. There is also a double-flowered variety.

The daffodil, *N. pseudonarcissus*, is also hardy, and very showy, coming into bloom about the end of April. There are numerous varieties. The type is a single large flower with a large cup, and both of a yellow color. One of the varieties has white petals with a yellow cup; another has a yellow flower with a deep golden cup; and another has several cups, one within the other.

The polyanthus narcissus, *N. tazetta*, is considered the most desirable of them all, but it is not hardy in this climate. We must content ourselves to employ it for window gardening, for which it is well adapted. The flowers are borne in trusses of from six to twenty in a truss, are large and very fragrant. There are many varieties, some white

with yellow cup; some white, with orange cup; others yellow, with orange cup; others all white or all yellow. There is also a variety of double flowers.

The President of our Association has planted a large number of different species and varieties the past autumn, and it is expected that he will give us the results of his experience with them as soon as they have done flowering.

MARLBORO' RASPBERRY.

SPECIAL NOTICE.

We are instructed by the *Rural New-Yorker* to say that those subscribers to the *Canadian Horticulturist* who have paid us three dollars in order to club with the *Rural New-Yorker*, will receive TWELVE plants of the Marlboro' Raspberry instead of four, as previously promised; and that any one who may at any time during the month of March send to this office three dollars, will receive the *Canadian Horticulturist* during the year, with all of its plant distribution, and the *Rural New-Yorker* for a year, with its free seed distribution, and TWELVE plants of the Marlboro' Raspberry, together with the Report of the Fruit Growers' Association of Ontario for 1884, now in press.

NOTICE TO SUBSCRIBERS.

If any numbers of the *Canadian Horticulturist* fail to reach you regularly, at the proper time, you will confer a favor by at once informing me of the fact by postal card or otherwise, and I will have another copy forwarded to

you at once, and will endeavor to ascertain the cause of the irregularity, and apply the remedy.

D. W. BEADLE,

Editor.

CANADIAN PLANTS IN JAPAN.

The following letter, addressed to the President of the Fruit-Growers' Association of Ontario, announces the safe arrival of the plants sent by him to Mr. Tsuda, of which we gave a brief notice in the February number:

WM. SAUNDERS, Esq.—Dear Sir,—How can I sufficiently thank you for such a lot of valuable plants, which reached me from you the last mail. The plants you sent are most interesting, and I shall be delighted to try them, and to propagate them. They reached here in excellent condition, the young shoots just ready to come up, and I have placed them in the ground and shall expect, in due time, good results. Of course I shall let you know how they do, and what success I have with them, later on. I am almost certain they will do well here, as most such small fruits do, and, in fact, in any part of Japan. The weather is not yet very cold, and now is the best time to plant them, which I have done, duly and according to your advice as to the number of feet apart. I shall be greatly interested to know how they do, and shall take great care to cultivate them well.

I should be very glad to give you any information about the native plants, and as to the grape plants, I should be glad to send you any variety. Just now is too late to send, so I will wait until the spring. I will enclose you some seeds of various trees, and more from time to time, as I can get them. If I can do anything else for you in my line, I shall be most glad to do it for you.

Many of the American fruits do well here. The apple in the northern part of Japan grows very well. I think, too, that our Japanese Persimmon does very well in your country. I shall be very glad to receive any of the publications of your

Fruit-Growers' Association, and shall be pleased to hear of the good work you are doing in extending fruit culture among the people of your country. If I have any reports of the work here, I shall be most glad to send them to you.

And now allow me to extend you my very best thanks for the interest you have taken in Japan and, through this interest, the favor you have done to me.

Yours, very truly,

T. TUDA.

Azabu, Tokio, Japan,
Dec. 3rd, 1884.

McINTOSH RED APPLE.

We have received from Mr. Allan McIntosh, of Dundela, Dundas County, Ontario, a box of the McIntosh red apples, with the request that we would test them and let the readers of the *Canadian Horticulturist* know what we think of them. He remarks that the spots on them, at his place, the past season have been very light, and if the next spring is not too wet and cold, there will be no spots on them the coming season.

In point of appearance we must say that these apples are very handsome indeed, that their beauty is enough to sell them in any market. They very much resemble very large and very high-colored Snow apples. The form of the apple is somewhat more flattened than that of the Snow, but in other respects the general shape of the fruit is very like that apple. The color is a rich dark red, relieved with lighter coloring on the shaded parts, and the whole is covered with a thin bloom, like the Red Astrachan. The flesh is nearly white, not quite so white as that of the Snow, nor quite so melting, yet

very tender, juicy and of excellent flavor; more highly flavored than the Snow. It is a far handsomer and very far better apple than the Ben Davis. The specimens received were in fine eating order, hence we infer that this apple is at its best in January and February when grown in Dundas County, and if intended for the English market, should be shipped in the fall in preference to a spring shipment.

A HANDSOME SEEDLING APPLE.

We have received from Mr. M. E. Park a couple of apples of great beauty. He writes that they are from a seedling tree, grown in the same latitude as Montreal, which is about six years old, its trunk of the diameter of a tea cup, and that it bore fully two barrels of apples the past season, which was its second season of bearing. The apples received were of large size, resembling in form well grown samples of Northern Spy, only not quite so conical. The stem is about an inch long, very stout, and set in a deep cavity. The calyx is set in a basin of moderate depth, slightly corrugated. The ground color is a very light lemon, beautifully marbled and shaded with bright carmine, and the surface sprinkled with minute grey dots. It is one of the most attractive in appearance of any we have seen, rivalling in beauty the beautiful Louise, which was exhibited some years ago at one of the winter meetings of the Fruit-Growers' Association, in Hamilton. The flesh is almost white, fine grained, quite acid and not rich. It is too acid, as tested by us, to be generally relished

as a dessert fruit; perhaps later in the season the acidity may become less prominent. We think it would make an excellent cooking apple. If the tree be extremely hardy, capable of enduring the extreme cold of Northern Ontario, this seedling will be very valuable as a winter apple for those parts of the country where our higher flavored varieties utterly fail.

APPLES IN ENGLAND.

Keeling & Hunt, London, England, report sales, February 6th, 1885, of Baldwins at 15s. 6d. to 19s. sterling, the latter price being for high-colored fruit; R. I. Greenings at 8s. to 18s.; Roxbury Russets at 23s. 6d.; American evaporated apples at 40s per hundred weight.

Green & Whineray, K. 30, Exchange Buildings, Liverpool, England, report on 7th February, as follows:

The following quotations are for tight barrels: Baldwins, Boston, 14s. to 17s.; do., Maine, 16s. to 17s. 6d.; do., New York, 15s. to 16s. 6d.; do., Canadian, 16s. to 19s.; Greenings, 13s. to 16s. 6d.; Black Oxford, 14s. to 15s.; Newtons, 20s. to 25s.; Rox Russets, 12s. to 15s.; Golden Russets, 17s. to 19s.; Golden Russets (Canadian), 22s. to 26s.; Northern Spy, 13s. to 18s.; Kings, 20s. to 23s. Slack packed, 12s. to 14s. 6d. Slack and wet, 9s. to 12s. 6d.

Arrivals for the week are as follows: *Wyoming*, at New York, 812 brls.; *Britannic*, at New York, 2,215 brls.; *Sardinian*, at Portland, 3,993 brls.; *Norseman*, at Boston, 4,850 brls.; *Virginian*, at Boston, 2,439 brls.; *Samaritan*, at Boston, 1,414 brls.; *Istriian*, at Boston, 2,146 brls. Total arrivals for week, 17,869 brls. Total arrival to date, 409,070 brls.

CHARLES DOWNING.

The Fruit-Growers' Association of Ontario, at its winter meeting, passed the following resolution, expressive of their sense of the loss sustained by reason of the death of this eminent horticulturist:

Moved by Alex. McD. Allan, seconded by P. C. Dempsey, and resolved "that the Ontario Fruit-Growers' Association have learned with feelings of the profoundest regret of the death of the venerable Charles Downing, of Newburg, N.Y., one of the most unselfish of men; in his writings pointed and always reliable; in his correspondence prompt and obliging; charitable towards all men, yet firm in all good principles. There is, we believe, no horticulturist of the present century who has left behind him so valuable a work of reference upon fruits and fruit culture, and at the same time retained so warm a place in the hearts of all true friends of horticulture. A man possessed of the finest traits of character that combine to make a perfect model of the true horticulturist, the man and the Christian. In placing upon record our sentiments at parting with one of so great value, not only to horticulturists, but to humanity at large, we know that the gain is his while we deplore the loss, and that he is now reaping the rewards of so pure a character."

THE LONGFIELD APPLE.

Doctor T. H. Hoskins, of Vermont, writes to the *Rural New-Yorker* that this is the only winter apple of the Department of Agriculture's importation, that has fruited sufficiently with him to give an idea of its merit. It is of the size, color, form and general appearance of Fameuse, but covered with a heavy blue bloom. The stem is short and slender, inserted in a small but rather deep cavity. The calyx is closed and in a very shallow, regular basin. The core is rather large for the size of the apple. The flesh is much like that of Fameuse and of very good

quality. It keeps well into March. It is a productive and valuable apple of the iron-clad class, lacking only in size for market.

Our readers will remember that we gave some account of this apple last year, see page 136 of Volume VII., and that Mr. D. H. Carpenter, of Wisconsin, speaks in very high terms of this apple, saying that, when everything is taken into consideration it is decidedly the best winter apple they have in Wisconsin.

WHAT THE PEOPLE SAY.

You deserve all the support we can give you. You are improving every year, and I feel as if I must have the publication. REV. DR. ARMSTRONG.

Moore, February, 1885.

The vine received from the Fruit Growers' Association last spring grew nicely. We like the *Canadian Horticulturist* very much, and think the colored plates alone are worth the subscription. R. W. BASS.

Oxford Centre.

You give good inducements for people to subscribe, but I am sorry to say there is not any of my neighbors take any interest in fruit-growing; but some of them like fruit, which I know to my cost. W. J.

Huron, February, 1885.

I am happy to see the *Canadian Horticulturist* getting on so well, and trust the Society is still doing better, as it certainly deserves every encouragement, for it is doing a good work, and is not yet half appreciated. J. R. COTTER.

Barrie, February, 1885.

I am very much pleased with your valuable monthly, and wish it all success. I consider the twelve colored

plates alone worth the subscription price, saying nothing of the excellent and instructive reading matter. Hoping each year will bring you increased prosperity, I remain.

Yours, &c.,

W. J. PATTERSON.

Bimbrook, February, 1885.

I took the *Canadian Horticulturist* last year for the first, and was very much pleased with it. It is a pity that the fruit growers of Canada are not enough interested in the *Horticulturist* to give it the support necessary to enable you to publish it weekly. The age in which we live is a fast one, and the old monthly system is too slow to satisfy a fast people.

ROBT. SLOAN.

Clarkson, Feb., 1885.

I did not intend to subscribe this year, for I am sick of attempting to try to grow fruit for other people's children to steal. Last summer I had 78 Flemish Beauty pears stolen from me in one day, it was done by neighbors' children. The laws in this country are such that a premium is given to young people to steal, for if you prosecute, the parents are fined, instead of giving them a good birching, the same as they do in the old land. But I will try another year.

Toronto, January, 1885.

A. B.

SIR.—Please find \$1 enclosed for the renewal of the *Horticulturist*. I choose for my gift the Catalpa. Please to remember that the January number has not been sent. Being only an amateur, with a small garden, I thought I ought to do without it; but I have come to like it and long for it, and believe there would be quite a blank if it were not a *regular visitor*. It is well gotten up and interesting, although I think a great fault of you regularly-bred nurserymen is that you don't seem to know the wants of us less skilled in the art. Bot-

anical names are seldom explained. For instance, how could it be expected of us to know the meaning of globular glands, reniform glands, and the like? And when you talk of using the tap-root, what do you think we know about the tap-root? We may guess at it, but that would be all. There is seldom even a hint given why one kind of a tree should be grafted and another budded. It would also be very interesting to read a chapter on the art of hybridizing; but as I have said enough for the present, I will stop by wishing you success in your noble work.

F. W. P.

CORRESPONDENCE.

THE STATISTICS OF FRUIT-GROWING IN ONTARIO.

The statistics of fruit-growing is an interesting as well as an important subject, but it is not one to be easily dealt with in so far as relates to the Province of Ontario. The fact is that such returns as have been obtained are conflicting, and it is yet too early to express a positive opinion as to their accuracy. According to the census, the area in orchard and garden in 1881 was 281,541 acres in the rural municipalities, and 23,264 acres in the urban—making a total of 304,805 acres for the Province. According to the municipal returns, which were collected by assessors for the first time in 1883, the area in rural municipalities was 197,450 acres, and in 1884 it was 192,837 acres. The discrepancy between the census and the municipal enumerations is nearly 90,000 acres, and is too large to be readily accounted for. The source of information is the same in both, for the census collectors and the township assessors make a house-to-house canvass alike. Why should there be so great a disparity in the results? Why should the

census for 1871 give as large an acreage as the assessment for 1883? I cannot answer, but upon comparing the assessors' returns for the two successive years, 1883 and 1884, I am disposed to think that they are more reliable than those of the census. Between these years the difference is only 4,600 acres, and when one considers that there are about 200,000 farmers in the Province, it is obvious that a very slight change in the returns of one-tenth of their number might account for the aggregate. There are not many farmers, even in the oldest settlements, who know the exact area they have in orchard and garden; but it is a reasonable supposition that when they find the question asked by the assessor year after year, as it now is, they will, in a growing number of instances, endeavor to answer it by actual measurement. Four or five years hence we shall doubtless know the area of orchard and garden in the Province with almost as near approach to accuracy as we now know the area of cleared land.

Assuming that there is uniformity in the system of taking each decennial census, the returns have at least the value of enabling us to show the rate of progress made. Thus we know that in 1851 there was in Ontario, on every hundred acres of cleared land, an average of one and a half acres in orchard and garden; that in 1861 the average was about the same; that 1871 it was two and a third acres; and that in 1881 it was two and three quarters. The last, it must be allowed, is a very good average for the whole Province, and even according to the assessors' returns of areas, it is an average of nearly two acres for every hundred cleared.

In the following table the acreage at four decennial periods is given by county groups, arranged as nearly as may be according to their climatic con-

ditions—the figures being for rural districts only:

	1881.	1871.	1861.	1851.
6 Lake Erie Counties	53,338	38,068	18,537	10,964
3 Lake Huron Counties	29,418	18,697	3,589	988
2 Georgian Bay Counties	18,839	10,253	1,666	733
7 West Midland Counties	57,632	43,859	19,478	10,909
9 Lake Ontario Counties	76,177	55,683	28,452	20,981
11 St. Lawrence and Ottawa Counties	28,788	20,568	8,388	7,731
4 East Midland Counties	15,383	10,409	7,832	2,704
4 Northern Districts	1,966	159	16	....
Totals.....	281,541	197,696	87,958	53,010

These statistics furnish us with a succinct history of fruit-growing in the Province, and they are of still greater value in this respect if studied by counties. In the County of Middlesex, for instance, the area in 1851 was 2,388 acres; in 1861 it was 5,030 acres; in 1871 it was 11,908 acres; and in 1881 it was 15,576 acres. In the County of Bruce the area increased from 38 acres

in 1851 to 8,401 acres in 1881, and in Grey it increased in the same period from 56 acres to 10,408. As evidence of progress, these figures are very valuable, assuming even that they are correct in a relative sense, and if the same rate of progress be maintained in the next thirty years, Ontario's position will be a proud one among the fruit-growing countries of the world.

The statistics of acreages, as collected by township assessors in 1883 and 1884, are given by county groups as follows:

	1884.	1883.
6 Lake Erie Counties..	39,952	40,084
3 Lake Huron " ..	19,952	19,907
2 Georgian Bay " ..	11,577	12,228
7 West Midland " ..	41,628	42,800
9 Lake Ontario " ..	55,112	57,358
11 St. Lawrence and Ottawa Counties	14,320	14,760
4 E. Midland Counties..	9,780	9,950
3 Northern Districts ..	516	363
Totals.....	192,837	197,450

The greatest discrepancy in the areas of these two years occurs in the Lake Ontario counties, and is largely owing to the recent extension of the limits of Toronto; the annexed lands being chiefly occupied as nurseries and market gardens. In the West Midland counties the returns of decreased acreages are confined almost wholly to the counties of Brant and Perth. With reference to the Northern Districts, it should be remarked that no returns have been received from settlers in the unorganized municipalities, but their total is probably less than 1,000 acres.

As I have already intimated, it is yet too soon to say definitely which statistics are the most reliable—those of the census enumerators or those of the assessors; but in calling attention to the wide difference which the returns pre-

sent, it may be possible to arouse an interest in the subject that will soon terminate the doubt.

Concerning the quantities of fruit grown in the Province, we are practically limited to two sources of information, neither of which are wholly satisfactory. We have in the census returns for 1871 and 1881 statistics of fruit under three heads, viz., apples, grapes, and other fruit. We have also in the trade tables of the Dominion the quantity and value of exports of green fruit from year to year; but in consequence of the practice of crediting a Province with all exports made from any port in its territory, regardless of the place of production, it is not possible to ascertain definitely how much of the total exports of fruit are the growth or product of Ontario. The nearest approach to definite figures is to be obtained by comparison of the census and the trade tables. Having ascertained Ontario's proportion of the total fruit crop of the Dominion, we can form an idea of her share of the exports. The census returns gave the crops of 1870 and 1880 as follows, for Ontario and the whole Dominion:—

—1880—Ontario—1870—

Apples, bush	11,400,517	5,486,504
Grapes, lbs	3,697,555	1,028,431
Other Fruits, bush	644,707	242,878

—1880—Dominion—1870—

Apples, bush	13,377,655	6,365,315
Grapes, lbs	3,896,508	1,126,402
Other Fruits, bush	841,219	358,963

Now, for both of these years Ontario's produce was about 86 per cent. of that of the whole Dominion, and if it be assumed that her proportion of the exports is about the same, we can estimate with some degree of accuracy the progress made by our Province in fruit-growing from year to year. The following table gives the quantity and value of Canada's exports of green

fruit for the sixteen years 1868–83, grouped in periods of four years each, and the annual average for each period:—

FIRST PERIOD.

Year.	Barrels.	Value.
1868	34,405	\$87,333
1869	11,310	39,150
1870	20,810	58,811
1871	45,920	98,857
Averages	28,111	\$68,788

SECOND PERIOD.

Year.	Barrels.	Value.
1872	106,568	\$264,015
1873	61,243	183,348
1874	51,084	128,915
1875	63,397	176,295
Averages	70,573	\$188,143

THIRD PERIOD.

Year.	Barrels.	Value.
1876	84,107	\$170,005
1877	77,888	194,942
1878	53,213	149,333
1879	87,101	157,618
Averages	75,577	\$167,974

FOURTH PERIOD.

Year.	Barrels.	Value.
1880	146,548	\$347,166
1881	334,538	645,658
1882	212,526	540,464
1883	158,918	499,185
Averages	212,907	\$508,118

The progress of our fruit-growing industry which these figures clearly indicate is very gratifying, and there can be no doubt that the fruit-growers of Ontario deserve in large measure the credit for it. The climate of the Province—more especially that portion of it encircled by the three great lakes—is admirably adapted for the maturing of the finest qualities of fruits; and possessing the natural conditions for the production of fruit that has an established reputation in foreign markets, the energy and intelligence of our people may be depended on to make the

greatest possible use of our splendid opportunities.

A. BLUE.

Toronto, February, 1885.

The following list shews the counties as grouped under the heads referred to in the foregoing paper :

Lake Erie.—Essex, Kent, Elgin, Norfolk, Haldimand, Welland.

Lake Huron.—Lambton, Huron, Bruce.

Georgian Bay.—Grey, Simcoe.

West Midland.—Middlesex, Oxford, Brant, Perth, Wellington, Waterloo, Dufferin.

Lake Ontario.—Lincoln, Wentworth, Halton, Peel, York, Ontario, Durham, Northumberland, Prince Edward.

St. Lawrence and Ottawa.—Lennox and Addington, Frontenac, Leeds and Grenville, Dundas, Stormont, Glengarry, Prescott, Russell, Carleton, Renfrew, Lanark.

East Midland.—Victoria, Peterborough, Haliburton, Hastings.

Northern Districts.—Muskoka, Parry Sound, Algoma.

FALL PLANTING.

DEAR SIR,—I beg to acknowledge the receipt of the Canada Baldwin Apple-tree from the Fruit Growers' Association, which was received some time ago. I planted it at once, believing that to be the proper time, without waiting to "heel it in," as some do. A friend once told me it was much better, when trees were obtained in the fall, to heel them in, to keep them there until spring had warmed the soil. "For," said he, "you will then see the fine, hairlike roots just starting out, and when put in the ground will grow at once." To this I said, "Why not plant them in the fall, in the place where they are intended to grow, and then the very small rootlets will not be in danger of being disturbed, and will be solid in the ground and ready as soon as the ground is warm in the spring to grow?" In my opinion, the only argument that can

be brought against planting in the fall is, perhaps, when trees have been taken up in the nursery from a thickly shaded place there may be some slight danger, when planted at a proper distance in the orchard, of their not being able to resist the cold of winter as well as when they were in the nursery. On this score I never had any difficulty, and when I buy trees in the fall and they arrive at a proper time, I plant them at once, and they grow.

GRAPES.

One of my neighbours complains about his grapes not doing well. To this I have to say, mine have done well. I have, amongst others, the Isabella, which is considered a rather late grape, and it ripened and was just as sweet as many much further south. If you have a stone wall, plant grape-vines on the south side of it. It makes all the difference in the world to have a proper place to plant them. If you have a big, unseemly rock or stoneheap on your farm, plant grape-vines about them, and the unsightly places will become profitable. Some say that such and such kinds of grapes will not ripen with them, or that they are much later, &c. Much of all this depends on the situation in which they are placed.

FRUITS IN GENERAL.

We have had a very dry season, and fruit in general has not done as well as usual; but taking one year with another, I believe we have as fine a fruit producing county as most in Canada. Tempered as it is by the waters of Georgian Bay, we have no trouble with early and late frosts. We have lost some plum trees, but this has been general all over. All the fruits of a temperate climate flourish here. Fearing I have trespassed too long.

I am, yours truly,

TIMOTHY CHAMBERS.

Presque Isle, Nov. 18th, 1884.

MEETING OF WINONA AND STONEY CREEK GRAPE GROWERS' CLUB.

(From Our Own Correspondent.)

A meeting of the above Society was held in the old church, School Section 2, Saltfleet, on Feb. 11th, but owing to the bitter cold, the mercury being 19° below zero, with a hard wind blowing, only a small attendance of members was the result. However, after lunch and a warm cup of tea, the programme of the afternoon was taken up, the officers for the ensuing year having been elected as follows:—President, Wm. Orr; Vice-President, George Slingerland; Secretary-Treasurer, E. D. Smith; Board of Directors, F. M. Carpenter, Isaac Smith, Joseph Tweedle, Wm. Spera, Murray Pettit, J. W. Smith and Robert Dewar.

The first thing on the programme was a paper on "Small Fruits" read by A. M. Smith, of St. Catharines, which was very interesting to those present. Mr. Smith advised growers to study the market and the soil and climate of the locality before planting. If one had early land let him plant early varieties, and if another had late land let him plant late varieties, thus avoiding an overstocked market. Again, if it was found that there was a better local market for one kind of fruit than another, other things being equal, plant the kind in most demand; for instance, if one lived near an evaporator where certain kinds of fruits were wanted, it would be wise to plant with a view to working off any surplus, at least, to the evaporators. If the local market was as good as any other for strawberries, it would pay better to plant some of the soft but heavy yielding varieties, as Crescent Seedling or Manchester.

For successful small fruit culture would lay down the following rules:—

Select the best soil, climate and varieties. Shelter as much as possible

from extreme cold of winter and drouth of summer by mulching and other means. Secure all moisture possible during fruiting season. Feed liberally. Pick and handle carefully. Use good, clean, attractive packages. Put just as good fruit in the bottom of the basket as on top, so that you can sell twice to the same party, and you will succeed.

Would recommend the following varieties in order of ripening:—Strawberries—Early Canada, Crescent Seedling, Wilson's Albany, Manchester, Sharpless, Arnold's Pride, Jersey Queen and James Vick. Black raspberries—Souhegan, Tyler, Mammoth Cluster and Gregg. Red raspberries—Highland Hardy, Hansell, Cuthbert and Niagara. Blackberries—Dorchester, Snider and Kittatinny. Gooseberries—Houghton and Downing. Red currants—Victoria, Versailles, Cherry and Fay's Prolific. White currants—White grape. Black currants—Black Naples and Lee's Prolific. And would recommend for trial:—Strawberries—Mrs. Garfield, Dan, Boone and Cornelia. Raspberries—Reliance, Marlboro' and Ohio, and the Agawam blackberry.

In answer to questions Mr. Smith said gooseberries thrived better and mildewed less with plenty of moisture. Had noticed this in gardens near the Falls, where the spray kept the ground damp. Thought Lee's Prolific preferable to Black Naples, especially on sandy land, as they do not grow so rank, and fruit is of a milder flavor. Thought highly of Fay's currant; thought it had not been overrated. Thought James Vick had been too highly praised: though under high cultivation it would yield immense, otherwise fruit would be too small. Thought Caroline best yellow raspberry. Shaffer's Colossal, a heavy bearing raspberry, but fruit a bad color.

Pride of the Hudson raspberry a failure. Would prefer unleached ashes as a fertilizer on his sandy loam at present prices. Thought rust on raspberries and blackberries was not caused by wet land. Had found the best remedy to dig up and burn the affected plants, as rust spreads like yellows in peaches.

E. D. Smith thought growers should be careful to do this, as this is acknowledged to be the only cure.

As there were other important subjects to discuss, the chairman limited the time for a short discussion on "Apples and Pears," that were to have been discussed in the morning, to fifteen minutes.

Regarding the best two varieties of pears to plant for profit, Mr. A. M. Smith thought Flemish Beauty had run its course, as it now spots and cracks too much; would name Bartlett and Beurre D'Anjou, and for a dwarf, Duchess D'Angouleme. Mr. Pettit recommended Beurre Gifford as a dwarf. Mr. Orr liked Louise Bonne as dwarf. Mr. Smith thought Duchess and Seckel most exempt from blight. Mr. House had found Beurre D'Anjou most exempt.

The next subject taken was "Grapes," regarded here as of more importance than all the rest, as there are planted out already in the township nearly two hundred acres, mostly in small vineyards from 10 acres downwards, and the area is increasing rapidly.

E. D. Smith introduced the subject by asking a series of questions, among others, What is the best red grape for profit? What is the best early grape? Said he had found ashes beneficial. Believed the Prentiss grape a failure, as the vine is not strong and healthy. Was very favorably impressed with the Niagara, had not fruited it yet, but vines were very healthy and strong, robust growers. Had planted Concords

and Niagaras alternately, and found Niagaras not only to grow better, but to recover from any drawback quicker. Believed it would pay to ship fine grapes in 10 lb. baskets instead of 20 lb. ones. Thought we should have better baskets than at present. Liked Roger 9 and 15. Found Salem tender, and the berries bad to burst during warm, damp weather. Found it paid to lay down tender varieties, but would not plant such knowingly. Thought we should raise a grape to pack and sell in winter, as our market is at present supplied with foreign grapes during nine months of the year. Would like to know if any one had had any experience with the Vergennes.

Murray Pettit had found Prentiss and Pecklington both failures. Found Duchess, Lady Washington and Noah all good white grapes—the latter as good as Niagara, except in quality, but would place Niagara first among the white grapes. Had known of others having good success on rich sandy land with Pecklington. Would rank the Delaware as the most profitable red grape if pruned severely and all to young canes, and heavily manured and thoroughly cultivated. Found the Rogers' varieties to mildew if manured heavily.

For early grapes likes Red Wyoming and Dracut Amber among the new kinds. The latter a healthy, strong growing, productive variety of medium sized bunches of medium sized red grapes of medium quality. Had made most money out of Champions, but would not think of planting them except on very early land. Believed that no one would buy Champions if they could get Moore's Early. The latter he found not a very heavy bearer, nor a very strong grower, but medium in these respects, the fruit, however, extra fine, not quite so early as Champion. Worden, a grape very nearly

resembling the Concord, and two or three days earlier.

If planting a vineyard would recommend, say one-third Concord; one-third Champion, Moore's Early, Worden and Niagara; one-third Delaware, Rogers' 9 and 15, and Salem; but would not recommend this selection for all localities.

A. M. Smith liked the Brighton very much, but it needs marketing as soon as ripe. Thinks the Vergennes a very desirable grape, being a long keeper and of good quality, and the vine a strong, healthy grower.

Mr. House would recommend letting Rogers' 9 and 15 run long arms. Had them with arms seventy (70) feet long.

Mr. Orr had found Champions pay best, Delawares next, and then Concord. Rogers' 9 and 15 also paid. Believed the Niagara the king of grapes.

THE CHINESE PRIMROSE.

MR. EDITOR,—Your clipping from the *California Horticulturist* on Chinese Primrose culture in windows, is misleading to the lovers of that useful winter decoration.

With your permission, I will give the mode of culture we have practiced the past twenty years, with good results. As it is costly and troublesome to raise seedlings on a small scale, and not very satisfactory if but two or three plants are required, we purchase good quality of plants of the colors wanted, and they last a number of years by dividing the old plant to single crowns, in the month of June. We do it with a small knife. Split the plant from crown to root, shorten back the old root, plant in five-inch pots but two thirds full of earth. By September the plants will have grown so much as to stand high above the soil. We fill the pot with earth, just leaving room to water; take

these into the house and let them bloom all winter, which they never fail to do, to the delight of all who see them. By this treatment the plants do not become top-heavy, as our California friends do, but steady themselves by the old leaves turning down until resting on the rim of the pot, thus bracing the plant. We prefer to keep the plants in a cool room, with plenty of light, and keep the earth moist.

MARY A. HALL.

Woodstock, Jan. 28th, 1885.

RHUBARB WINE.

Noticing an article on unfermented wine in the January number, I thought it good, now we are deprived of a little luxury that way by the Scott Act. I am no friend to that Act. I look on it as arbitrary; and as we are not all growers of grapes, but most every one with a garden, however small, grows rhubarb, and a very good wine, with a good body, can easily be made. To every gallon of cold water (*rain-water is best*) add five pounds of ripe rhubarb cut into thin slices; do not peel it; let it stand a week or nine days, stirring it every day, and cover it with a cloth or blanket; strain the macerated substance through a coarse cloth. Now, to every gallon of the liquor thus procured add four pounds of sugar and the juice of a lemon and the rind of one; now cask it; when fermentation is over bung it down; bottle in March, and by June it will be fit for use.

Rhubarb makes also excellent jelly. Cut the rhubarb up, and put it in an enamelled kettle, with very little water—enough to keep it from burning—until the juice comes; when tender, strain it, and to every pint of juice add one pound of sugar, and boil until it jellies.

T. A. H.

Medora, Muskoka.

JUDGING FRUIT.

Doubtless one of the most important matters in connection with any exhibition is the appointing of competent judges. There was a time when this Ontario of ours was in its infancy and exhibitions were entirely local, with but very little competition in any class; that, as a rule, judges were expected only to decide upon the excellence in appearance of specimens before them without regard to varieties, how grown, or whether or not possessed of quality, or actually valuable as a crop for market. A black Gilliflower was likely to receive the highest award with Baldwin and Esopus Spitzenburg in competition. While another class of judges would give preference to the largest specimens without regard to points of excellence. A Gloria Mundi would far excel an American Golden Russet in their estimation, and a Louis Bonne de Jersey, or even Flemish Beauty, would not be considered for first place if the portly Souvenir du Congr  s appeared in competition. But there was not much chance of any immediate loss from this bad system of judging in those days, as there was a ready demand for the small amount of fruit grown, and all varieties were easily disposed of or used at home. This state of affairs no longer exists, and in many sections we find growers top grafting old orchards, so as to get only such varieties as are of value both for home and foreign consumption.

There has been some improvement in the method of judging, which, so far as it has gone, has had a beneficial effect in inducing growers, in many instances, to discard worthless varieties. Possibly few consider the responsibility of judges as they make awards now-a-days at our leading, or indeed at all our exhibitions. The general public looks up to them as being possessed of superior knowledge, and quite capable

of dealing correctly and fairly with the subject. There may be ten, fifty, or more growers who desire to plant orchards of various fruits, and they are all watching with much interest the awards of these judges in order that they may select varieties receiving the highest awards. Generally speaking such growers will make their selections from the various collections on the tables, hence the great importance of care and skill in making awards in such cases, and that such awards should be in writing, containing full and explicit reasons.

We have arrived at a time when I believe it is necessary for the public benefit to look more particularly into the matter of judging fruits, and, if possible, to establish a scale of points and set of rules by which judges should act in arriving at awards, and if all Societies that hold annual exhibitions would publish such rules and directions to judges in their prize lists, much good would be accomplished.

Look at our several large fall exhibitions, and we find that in the past few years there has not been much improvement in the system of judging, or perhaps more correctly speaking there has not been a system at all, for although the awards are generally more correct than they would stand by the judgment of fifteen or twenty years ago, yet we find the same differences in the various exhibitions between different sets of judges as of old. Now, while it would be unreasonable to expect all judges to agree precisely on all points, I do think that in many leading important points all should agree.

Competent judges should possess a thoroughly *practical* knowledge of the whole subject, beginning with the tree and vine, its growth and habits, soil and cultivation required, general care, the market values of the various fruits upon which they are called to pass

judgment, and the most desirable varieties for the various soils and climates in this Province. They should be able to make their awards in writing, setting forth the points of superiority in the collections or plates receiving awards, and in every case give the number of points awarded to each variety. They should also be possessed of solid backbone, and so strong a sense of justice that there would be no inclination to favoritism.

Unless a judge has an extensive knowledge of his subject, he is apt to judge the specimens before him by the result of his experience upon his own grounds, which may not be extensive, or fair, even as a general test for his own neighborhood. He might award first prize to four varieties of Pears, consisting of Tyson, Osband's Summer, Stevens Genessee and Duchess, simply because he knows these, and they have suited his taste very well, whereas another four in competition consists of Bartlett, Flemish Beauty, Duchess and Josephine de Malines, which should generally have had first place on a scale of points of excellence and value in market.

In judging at a Township exhibition it is necessary to consider awards in accordance with the capabilities of soil and climate within that territory. But at a Provincial exhibition a large variety of soils, and especially climatic capabilities, should be considered, if complete justice is to be meted out to all exhibitors.

A committee of three judges will do more work in a day than five judges, and, as a rule, their work will be better done. Many advocate the appointing of one judge only on each section, and doubtless it has advantages, and chiefly that where one has the entire responsibility cast upon his own shoulders, he will not accept the position, in the first place, unless he feels satisfied he can

do the work properly, and then he will exercise every possible care in examining specimens before placing awards.

Then, again, judges should be paid properly for their services, and then they would take more time and exercise more care in making awards.

If properly paid, Associations could reasonably require judges to make all awards in writing, giving the scale of points of merit in every case, and also giving reasons for casting out any varieties they may think proper so to do. In awarding upon collections a great variety of points occur besides passing upon the condition of specimens making up such collections. For instance, every general collection should contain such varieties as will cover the longest possible season both for cooking and eating, besides being those the grower considers of the highest market value.

Where collections receive no award, the reasons should be noted in the book of awards, and if any collection is considered of almost equal merit with another that has received an award, the point or points in which it is lacking should be specially noted.

In judging collections the first point, after seeing that the proper number of varieties are entered and correctly named, is to compare the specimens in each collection, after which points should be taken, adopting five or ten as a maximum. Then, again, while one collection may scale a larger number of points than some others, so far as perfection of specimens is concerned, yet it may lack varieties which are of a much higher market value than any in it, and hence it is important that home and foreign market value be taken into account. In fact every point connected with growth, productiveness, general value, quality and hardiness, should be considered in coming to a decision. In the past too much weight has been given to the

appearance of specimens upon the table, and there is always a tendency this way, especially among amateur judges, which I believe is often fruitful of a great amount of damage, as growers are so apt to adopt varieties thus approved of by judges. A comparatively worthless variety may be so grown as to *appear* magnificent, as a tree that outwardly seems healthy and flourishing may be rotten at the heart. We generally find that specimens of fruits being newly introduced are very fine, simply because the introducer wishes to make a good impression, and hence grows specially for the purpose of advertising his goods without regard to immediate cost. In these cases judges should carefully scrutinize the quality, and state in their report any other facts found, so that the public interests be properly guarded.

ALEX. MCD. ALLAN.

GRAFTING AND PRUNING GRAPE VINES.

Your correspondent wishes to know how to graft his vines. I suppose why not inarch them, that is, grafting by approach. Very suitable and safe. Have your new or superior kind in a pot or box; place it near and securely—near enough to be in a convenient position to form a junction with the stock. Then pare off with a sharp knife a slice from each of equal size. Bring the two wounds together as exactly as possible, fitting bark to bark; hold them firmly and tie them together, not so tight as to bruise the bark of either. Now tie some moss around the junction and moisten it every day, or cover it with grafting clay or wax. When firmly united to the stock the new vine in the pot or box may be cut off at the junction and be planted out. You can do the work later in the year

if you like on the young wood of the present year's growth, when it has acquired some solid wood, just when it is beginning to change color. This way requires care, for the wood is tender and more liable to break than year old wood. This young wood unites more quickly than older wood. There are so many ways of training vines I think the simplest the best. For a vine on a wall or building or trellis, I think this is as good as any:—First obtain two shoots from two buds left on when the vine was planted. Train these upright, and in the autumn bring these two shoots down and train them right and left horizontally a foot from the ground. In the spring, when they begin to grow, select three buds on each main stem, two feet apart; rub all the other buds off. Now let these three buds on each main horizontal arm grow up perpendicularly. During the summer stop all the laterals at the first joint, and stop the leading shoots when at the top of the trellis; tie the leading shoots as they grow, or the wind will break them. Now in the autumn the vine will have two canes to bear fruit; that is, one upright cane on each arm to fruit. The other two will be cut down to two buds close to the main horizontal stems. These will send up shoots to be trained between the fruit bearers, while the two end shoots will be trained down in the line of the horizontal ones. Now the third summer the last year's horizontal trained shoots should have all the buds rubbed off except two on each, two feet apart. Train them up as the others to the top of the trellis or wall. So now there will be four fruit-bearing upright shoots, and four to bear the following year. In the autumn those that have borne fruit should be cut down and the others left nearly their whole length to bear fruit.

T. A. H.

Medora, Muskoka.

HARDY PERENNIAL PLANTS.

(Read at the recent winter meeting of the Fruit-Growers' Association of Ontario.)

I wish to bring before the Association the importance of encouraging the cultivation of hardy perennial plants for the garden. The old system of raising annuals and tender bedding out stuff every year is both troublesome and unsatisfactory, and to those who have no proper houses or frames for propagating it is also expensive, as they have no other means of filling their borders except by purchase; and to those situated in the country this is not always possible. The mania for gaudy bedding and carpet work is happily dying out, and a taste for the beautiful Alpines and other hardy classes of perennials is taking its proper place. To my mind there is something in the individuality of the beautiful spring bulbs and Alpines that quite casts into the shade all the ribbon and carpet bedding of the fashionable garden. From early spring till late in fall a continual succession of flowers can be obtained from the hardy garden without the annoyance of raising the young plants every year, and watching the weather for a favorable time after the late spring frosts are over for their bedding out. Then again some of them are hardly well into flower when the dreaded early fall frosts come, and the work of the summer is destroyed in a night. Not so with the hardy garden. In the early spring the Snowdrops, Crocus, Snowflakes, Scillas, Narcissus, Hyacinths, &c., followed by other spring and summer flowering plants in rapid succession, keep the borders gay all the time. While the hardy garden must be in a great measure filled with foreigners, yet there are many natives that are equally as well worthy of cultivation; in fact, so much is this the case, that in Europe a garden of any

pretensions without a border for American plants and shrubs would be looked upon as wanting in one of its greatest attractions. They consider our Cypripediums, spectabile and pubescens, as the most magnificent herbaceous plants in cultivation. Then we have the Trilliums or Wood Lilies, Liliuns, Hepaticas, Erythronium, Sanguinaria or Bloodroot, Asclepias, Aquilegias, Violas, several species of Phlox, Lobelias, Gentians, Asters, and an innumerable number of other things which would look well in any garden. With these and a proper selection of plants of foreign birth, no garden need be without a good display of flowers from early spring till late in the fall.

It would extend this paper too much to go over a long list of names which can be got out of any descriptive catalogue. I will only mention a few natives, some of which should be found in every garden. If some florist or nurseryman would take to growing and putting on the market a good selection of perennials, he would be doing a good work, and no doubt it would go far to create and perpetuate a taste for hardy garden plants, which once acquired will never be given up while life lasts. In preparing a border for perennial plants it is of as much importance to have it deeply dug or trenched as it is for any vegetable crop whatever. If possible, incorporate some leaf mould and a small portion of very rotten manure, and if the land is heavy a quantity of sharp sand will be an improvement.

Most bulbs require a good, rich, deep soil. Hyacinths, for instance, cannot be grown to perfection without plenty of manure and depth of soil, and when once a bed of them is planted under these conditions they will last for several years without further care, except to give them a good mulching with well rotted manure every

fall. Above everything follow nature as close as possible in soil and situation. One class of plants likes a shady situation and moist soil; another will stand the hottest midsummer sun and delight in it. So according to the situation a proper selection should be made.

That this may be the means of drawing attention to, and creating an interest and love for the beautiful hardy flowers of the garden, will be my prayer.

LIST OF HARDY PERENNIALS.

Anemone	....	Nemorosa.
Asclepias	....	Tuberosa, Orange Milkweed.
"	....	Quadrifolia, "
Asters	.....	A great many species.
Aquilegia	....	Canadensis, Columbine.
Campanula	..	Rotundifolia.
Cypripedium	..	Spectabile.
"	..	Pubescens.
"	..	Parviflora.
"	..	Acaule.
"	..	Arietinum.
"	..	Candidum.
Dicentra	....	Cucullaria.
"	....	Eximia.
Erythronium	..	Americanum.
Gentiana	....	Andrewsii.
"	....	Alba.
Hepatica	....	Triloba.
"	....	Acutiloba.
Lithospermum	....	Canescens.
"	....	Hirta.
Lobelia	.....	Cardinalis.
"	.....	Syphilitica.
Lilium	.....	Canadense.
"	.....	Philadelphiacum.
"	.....	Superbum.
Phlox	.....	Divaricata.
Sanguinaria	..	Canadensis.
Sisyrinchium	..	Bermudiana.
Thalicterium	..	Anemoides.
Trillium	...	Grandiflorum.
"	...	Erectum.
"	....	Erythrocarpum.
Viola	.....	Pedata.
Urolaria	....	Grandiflora.

JAMES GOLDIE.

Guelph, January, 1885.

SAUNDERS' RASPBERRIES.

I do not know if Saunders' Raspberries are very widely known. If not, I think they ought to be, for their

cropping properties are extraordinary. They would be very useful where other kinds are difficult to grow.

ALLEN CHAPMAN.

Deans, Haldimand Co., Ont.

McINTOSH RED APPLE.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

DEAR SIR,—I send you a few apples, which are the apple called the McIntosh Red. Perhaps you never had them in winter. Please test them, and let your many readers hear what you think of their flavour and of their keeping through the winter season, which, I judge, will be a benefit to the community. I have stated in years past that the McIntosh Red was the hardiest tree and best flavoured winter apple known on the continent of America. I am the owner of the original tree. Last year you stated that the McIntosh Reds spotted. I have lived 70 years within 60 feet of the original tree, and to my knowledge the apples were not spotted till 1882 and 1883. In 1884 some of the apples were a little spotted, but in some localities, where the soil is high and dry, they were not spotted.

NOW FOR THE CAUSE OF BLIGHT.

During the spring of 1882 and 1883, in eastern Ontario, there was almost daily rain, with cold wind from the north-east. When the trees were in bloom the ground and trees were drenched with water. The trees could not get sufficient nourishment from the soil to feed the young apples; they starved nearly to death; and owing to the rain-water soaking the young apples, together with the cold wind, they could not thrive; they lacked nourishment. The black knot has arisen from the same cause. I have had cherry and other trees for fifty years, and the black knot in Eastern Ontario has done no damage till 1883. As above, the wet and cold are the

cause. There is no remedy for it but good spring weather. It is from Providence. Now, sir, November 11, 1884, I shipped a few barrels of the McIntosh Reds to Glasgow, Scotland. The salesman sold them at \$10 per barrel. I told him to let me hear what he thought of them, and how they stood the shipment. He stated they were the best apples he had ever eaten, but said they were bruised, and that I should have sent them before they were so ripe or soft. The remainder of my McIntosh Reds I sold here in these townships for \$3 50 per barrel. Can any other apple compete with this?

ALLAN MCINTOSH.

Dundela P. O., Ont., Jan., 1885.

FRUIT IN ALGOMA.

DEAR SIR, —Please find enclosed one dollar as subscription to the *Canadian Horticulturist*. I cannot do without it and the annual report, for after we get more clearing done here I am in hopes that fruits of hardy domestic kinds can be grown. My Wealthy apple, after three years' fine growth, died last spring. The cause was, I think, from the intense frost of last March, and then a hot sun coming out. The Canadian Baldwin made a fine growth last summer. We had a great crop of wild raspberries, strawberries and blueberries, but no cranberries. I will choose the flower seeds this year.

Yours, with respects,

W. WARNOCK.

Blind River, January, 1885.

RASPBERRY SAW-FLY.

The raspberry saw-fly (*selandria rubi*) is not a difficult insect to keep in check if noticed in time. It is very conspicuous on account of its colour and appearance. A weak mixture of about an ounce of hellebore to a pailful of water, syringed onto the plants, will easily destroy the larvæ. This should

be done in the beginning and middle of June, and is quite safe.

Yours obediently,

J. FLETCHER,

Ottawa, Feb., 1885. *Entomologist.*

WILL GARDENING PAY.

"There is money in fruit growing, a plenty of it, for the skillful, thoughtful grower. There are thousands of dollars in strawberries, or raspberries, if rightly grown; but ten acres of either are better than fifty or a hundred slovenly tended. There is money in melons, in cucumbers, in potatoes, in rhubarb and asparagus, in onions, in almost anything you can raise, if you will only raise a better article than anybody else. There is the secret. Men foolishly lie awake o' nights racking their brains to find some new crop that will bring them in a fortune at a dash, instead of studying how to better the crop they already have in hand.

"As to the business being overdone, it is all a delusion. The horticultural rank and file is not near so crowded as are the professions, into which so many farmers' sons are continually struggling to enter. You will find a hundred starving lawyers, preachers and doctors to one starving fruit grower. What we need is more system, more thoroughness. The farmer must be more liberal with his land, his live stock, his fruit trees; must feed them all better; must feed himself better and his family better, and he will feel better and succeed better. Tell your readers to stick to the farm."—*Farmer and Fruit Grower*.

SEED POTATOES—HOW TO SELECT THEM.

N. Y. AGRICULTURAL EXPERIMENT STATION.

In the fall of 1883 we selected and laid aside for seed the largest and the smallest tubers from the most productive and the least productive hill of ten varieties growing in the Station garden.

On the 8th of May, 1884, this seed was cut into single eyes and planted, each selection by itself in the garden, so that we had four short rows of each of ten varieties. The first row containing the cuttings of the largest tuber from the most productive hill, the second those of the smallest tuber from the most productive hill, the third row the cuttings of the largest tuber from the least productive hill, and the fourth those of the smallest tuber from the least productive hill.

The cultivation was alike and the treatment was alike during the whole period of growth, and when the tops were dead the rows were dug, and yield of merchantable and unmerchantable potatoes carefully noted.

In order to bring the results into comparison we calculated the yields obtained to the 100 eyes, and arranged the varieties in the order of merchantable yield, omitting one which is not entirely comparable. We have, then, in contrast nine varieties, the yield from the largest tuber from the most productive hill and the largest tuber from the least productive hill, the smallest tuber from the most productive hill and the smallest tuber from the least productive hill, as shown in the following table:

TABLE I.

	From most productive hill. Largest tuber. Lbs.		From least productive hill. Largest tuber. Lbs.	
	Merch.	Total.	Merch.	Total.
Rural Blush	116	138	102	123
Early Sunrise	109	123	51	62
Conqueror.....	94	103	56	62
Defiance.....	93	120	90	116
Adirondac	91	103	64	86
Walls' Orange	75	92	55	72
Beauty of Hebron. .	62	86	48	73
Crandall's Seedling	57	71	73	88
Early Mayflower ..	51	106	54	83
Average	83	106	66	85

TABLE I.—Continued.

	From most productive hill. Smallest tuber. Lbs.		From least productive hill. Smallest tuber. Lbs.	
	Merch.	Total.	Merch.	Total.
Rural Blush	96	119	52	79
Early Sunrise	82	102	27	55
Conqueror.....	65	78	27	42
Defiance.....	57	88	26	72
Adirondac	67	79	70	91
Walls' Orange	55	70	51	73
Beauty of Hebron. .	80	105	59	79
Crandall's Seedling	64	72	61	69
Early Mayflower ..	54	84	34	61
Average	69	88	45	69

We will now re-arrange this table in order to bring out a most important conclusion. We will bring in contrast the merchantable and the total yield from the smallest tuber of the most productive hill and that of the largest tuber from the least productive hill. Whereby it will be seen that the smallest tubers from the most productive hills yielded more crop than did the largest tubers from the least productive hills.

TABLE II.

	Smallest tuber from most productive hill. Lbs.		Largest tuber from least productive hill. Lbs.	
	Merch.	Total.	Merch.	Total.
Rural Blush	96	119	102	123
Early Sunrise	82	102	51	62
Conqueror.....	65	78	56	62
Defiance.....	57	88	90	116
Adirondac	67	79	64	86
Walls' Orange	55	70	55	72
Beauty of Hebron. .	80	105	48	73
Crandall's Seedling	64	72	73	88
Early Mayflower ..	61	84	54	83
Average	69	88	66	85

These tables (the more they are examined the stronger does the evidence appear,) furnish an important clue for progress in the improvement of the potato. They seem to indicate very

clearly that in order to increase our yield of potatoes, it is only necessary in digging our crop to expose the hills separately, and then before harvesting go through and select our seed potatoes from those hills which show the most abundant crop.

The experiment also seems to indicate that deterioration in a variety, whereby a good variety tends to become less and less profitable to grow, arises from the entire lack of selection from the point of view of the prolific plant, and that to obviate this deterioration it may only be necessary to yearly select our seed from the more prolific hills, instead of hap-hazard from the harvested crop.

The importance of this experiment perhaps justifies the massing of our conclusions in another table.

TABLE III.

	Lbs. per 100 hills Average.	
	Merch.	Total.
From largest tubers from most prolific hill	83	106
From largest tubers from least prolific hill	66	85
From smallest tubers from most prolific hill	69	88
From smallest tubers from least prolific hill	45	69

From this table it appears first, that the merchantable and the total yield from the seed taken from the most prolific hill, yielded in excess over the seed taken from the least prolific hill; second, that the yield of the largest tuber from the most prolific hill exceeded the yield of the largest tuber from the least productive hill; third, that the yield of the smallest tuber from the most prolific hill exceeded the yield of the smallest tuber taken from the least prolific hill; fourth, that the smallest tuber taken from the most prolific hill exceeded in yield the largest tuber taken from the least prolific hill; fifth,

that the largest tubers from the most prolific and the least prolific hills yielded more crop than did the smallest tubers from the same hills.

These differences in yield appear more clearly if we arrange the figures obtained in the order of their magnitude without regard to variety, and this leads us to table 4.

TABLE IV.

Largest tubers from most productive hill. Lbs. yield.	Largest tubers from least productive hill. Lbs. yield.	Smallest tubers from most productive hill. Lbs. yield.	Smallest tubers from least productive hill. Lbs. yield.
138	123	119	91
130	116	105	79
123	88	102	79
106	86	86	73
103	83	84	72
103	73	79	69
92	72	78	61
86	62	72	55
71	62	70	52

The question may arise whether the smaller size of the cuttings from the smallest tubers may not account for the difference in yield. The smallest tubers from the most productive hills, however, did not exceed in size the smallest tubers taken from the least productive hills, and hence our results must be interpreted that the tubers from the most productive hills possess more inherent vigor than do those of the least productive hills.

While we can not regard a single experiment as in any sense conclusive, yet the evidence seems so clearly in favour of using for seed only tubers from the more productive hills of potatoes, that we think we can not err in commending this subject to the careful consideration of potato growers, and we would be very glad, this coming season, to have those who are interested in the subject make a trial according to this method, and experiment for themselves, and report the results, however they may result, to the public.—E. LEWIS STURTEVANT, *Director*.

CATALOGUES RECEIVED.

VICK'S FLORAL GUIDE for 1885: Jas. Vick, Seedsman and Florist, Rochester, N.Y.

CATALOGUE OF CHOISEST FLOWER and Vegetable Seeds: F. C. Heinemann, Erfurt, Germany.

WHOLESALE CATALOGUE of Mohawk Valley Seeds, crop of 1884: A. C. Nellis & Co., Canajoharie, N.Y.

JOHN A. BRUCE & Co.'s CATALOGUE of Seeds, season of 1885. 34th annual edition: Hamilton, Ontario, Canada.

ANDRE LE ROY'S TRADE LIST of fruit and ornamental trees and plants: Nurseries at Angers, France.

PRICE CURRENT of choice seeds for 1885: By the Continental Horticultural Company, Gand, Belgium.

SIMMER'S PRELIMINARY SEED LIST of flower and vegetable seeds, issued in advance of regular Seed Catalogue, January, 1885: Toronto, Ont.

W. W. HILBORN'S ANNUAL Descriptive Catalogue and price list of small fruits, for spring of 1885: Arkona Horticultural Farm, Arkona, Ont.

WM. RENNIE'S SEED CATALOGUE, 1885: Wm. Rennie, Seed Merchant, corner Adelaide and Jarvis Streets, Toronto, Ont.

DESCRIPTIVE CATALOGUE of fruits. Twenty-sixth Edition. Ellwanger & Barry, Mount Hope Nurseries, Rochester, N.Y.

LOUIS LE ROY'S PRICE CURRENT of fruit and ornamental trees, florists' requisites, evergreens, camelias, roses, etc. Angers, France.

GREGORY'S ANNUAL ILLUSTRATED Retail Catalogue of Warranted Seeds: Grown and Sold by James J. H. Gregory, Marblehead, Massachusetts, 1885.

PETER HENDERSON & Co.'s MANUAL of Everything for the Garden: Peter Henderson & Co., Seedsman and Flor-

ists, 35 and 37 Cortlandt Street, New York, N.Y.

TRADE CATALOGUE of plants, hardy ornamental trees and shrubs, conifers, roses, etc. Cultivated by the Boskoop Nursery Association, at Boskoop, Holland.

GENERAL TRADE CATALOGUE of vegetable, agricultural, flower, tree and other seeds, offered by Ernest Benary, Seed Merchant and Grower, Erfurt, Germany.

THE STORR'S & HARRISON Co.'s SEMI-ANNUAL trade list of fruit and ornamental trees, small fruits, vines, evergreens, shrubs, roses, &c.: Painesville, Lake County, Ohio.

WHOLESALE CATALOGUE of choice and rare seeds, embracing the leading novelties of the season, 1885: Stuart & Co., 19 Tavistock Street, Covent Garden, W. C. London, England.

WHOLESALE TRADE CATALOGUE of garden, agricultural and flower seeds, etc., 1885: Grown by Henry Mette, Seed Grower and Merchant, Quedlinburg, Prussia.

LANDRETH'S RURAL REGISTER AND ALMANAC, 1885, one hundred and one years in business: David Landreth & Sons, Seed Farmers, 21 and 23 South Sixth Street, Philadelphia, Penn.

BOOKS, &c., RECEIVED.

ANNUAL REPORT of the State Board of Horticulture of California: A. H. Webb, Secretary, No. 40 California Street, San Francisco, California.

TRANSACTIONS of the Maine State Pomological Society for 1883, including proceedings of the winter meeting of 1884: Geo. B. Sawyer, Secretary, Wiscasset, Maine.

CANADIAN DAIRYMAN AND FARMER, published at 162 St. James Street, Montreal, subscription \$1 a year. A monthly periodical devoted to the dairy interests of Canada.

RANDOM NOTES ON NATURAL HISTORY is a monthly of eight pages, published by Southwick & Jencks, Providence, Rhode Island, U.S.A., at 50c. a year; devoted, as its title implies, to the various departments of natural history.

THE RURAL CANADIAN has incorporated with itself the *Canadian Farmer and Grange Record*. It is published monthly, at \$1 per annum, at No. 5 Jordan Street, Toronto, and is devoted to the farm, dairy, apiary, grange, garden and orchard.

POPULAR SCIENCE NEWS is published monthly, at 19 Pearl Street, Boston, Massachusetts, U.S.A., at \$1 a year. It treats of various interesting subjects that may be arranged under the several heads of familiar science, practical chemistry, the arts, agriculture, medicine and sanitary science.

SCHEDULE OF PRIZES offered by the Massachusetts Horticultural Society for the year 1885. Competition open to all persons. Robert Manning, Secretary, Boston, Massachusetts. The annual exhibition of fruits, flowers and vegetables will be held in Boston, September 15th to 18th, 1885.

THE WIDE AWAKE, published by D. Lothrop & Co., Boston, at \$3 a year, is a very interesting and instructive magazine for children. There is a good healthy moral tone pervading the whole. Some of the articles seem especially adapted to entertain and at the same time instruct the youthful reader.

LOVETT'S GUIDE TO FRUIT CULTURE is a very handsome catalogue of fruit trees and plants for sale by J. T. Lovett, Little Silver, New Jersey. It is very profusely illustrated with engravings throughout, and adorned with colored lithographs of fruits; and contains a great variety of useful information concerning the different varieties, methods of culture, and value for market.

JOURNAL OF THE NEW YORK MICROSCOPICAL SOCIETY, is published in nine monthly numbers, at No. 12 College Place, New York City, price \$1 a year. Devoted to microscopical science, a science that is throwing much light upon the fungoid growths which play, apparently, very important parts in the diseases of plants as well as of animals. The January number contains a very interesting paper upon the process of fertilization in plants.

HOW TO PROPAGATE AND GROW FRUIT is the title of a pamphlet of 64 pages, by Charles A. Green, of Rochester, N.Y., U.S.A., the price of which is only 50c. It treats of propagating the raspberry, blackberry, currant, gooseberry, grape, quince, peach, cherry, plums, pears, and apple; tells the author's experience in beginning, growing, marketing, etc.; treats of shipping fruits, evaporating, &c., &c.; and will be found very useful for consultation and reference, especially by growers of small fruits. We will send it to any of our readers, post paid, on receipt of the price.

FORESTRY BULLETIN, published by the Council of the American Forestry Congress, and ably edited by Bernard E. Fernow, Secretary, No. 13 Burling Slip, New York, N.Y., U.S.A. Subscription \$1 a year, which may be sent to Mr. Fernow. The officers of the American Forestry Congress are: Hon. Warren Higley, Ohio, President; Hon. H. G. Joly, Quebec, 1st Vice-President; N. H. Egleston, Washington, D.C., 2nd Vice-President; B. E. Fernow, New York, Corresponding Secretary. The objects of this Congress are the advancement of forestry in the United States and Canada. Its funds are derived wholly from membership dues, which are for life membership \$10, annual membership \$2; with an additional entrance fee of \$2.

TO THE CHINESE PRIMROSE.

But little I know of poetry's flow ;
 Know little of rhythm or time ;
 But I feel that to-night, with a muse so bright,
 I can mould my thoughts to rhyme.

For a Primrose rare, with its blossoms fair,
 Stands on my table to-night ;
 And shining and bold, its eyes of gold
 Seem watching me while I write.

And it blooms here for me, in a beauty as free
 As it did in that distant day,
 'Neath the pointed domes of the Orient homes
 Of the country of far Cathay.

And its fern-like fronds seem as fairy wands,
 As they gracefully droop and fall ;
 And are tinging my room with an emerald bloom,
 As a Nymph's or a Dryad's hall.

The Rose in its pride, in the noon's high tide,
 In the sunlight's golden stream,
 In the glitter of day, with its gilding ray,
 As beauteous perchance may seem.

Ah ! yes, I know, there are flowers that blow
 In the summer's glamour and shine,
 That in loveliness rare perhaps can compare
 With this beautiful friend of mine.

But, like our friends, when adversity sends
 Some cloud to obscure our sky,
 Or in winter's frost, or when needed the most,
 Their attractions pale and die.

But my flower will bloom without heeding the
 gloom,

Though the world be covered with snow ;
 And the darker the day, the more wintry grey.
 The brighter its beauties glow.

Oh ! dear loved flower of the darkest hour !

Oh ! type of a faithful friend !

As such type in thee, such a friend to me
 May God in His goodness send.

Innerkip, Jan., 1885.

F. M.

FAY'S CURRANT.—Joseph Hoopes of Pennsylvania, writes to the *New York Tribune* that after fruiting Fay's Prolific for two years, he thinks it produces clusters that surpass the immense bunches represented by the woodcuts that ushered this new fruit into notice.

This is one of the presents we offer to subscribers.

THE CENTENNIAL GRAPE.—Mr. Hoopes says of this grape that it is of fine, pure flavour, of a clear amber color, and so translucent that the seeds may be observed by holding the berries to the light. It is

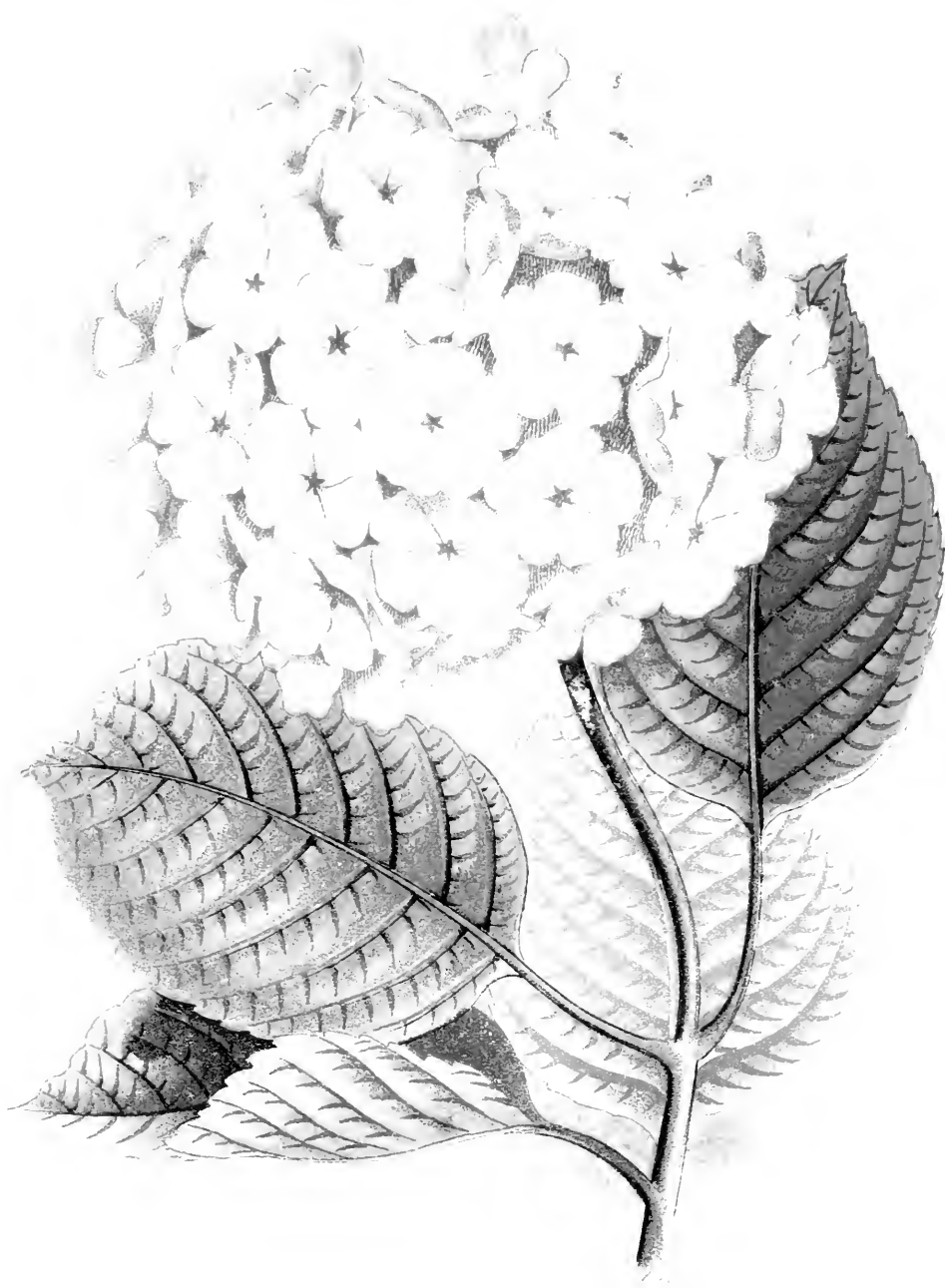
very juicy, sweet, with a soft pulp and and very thin skin.

ROSES FOR WINTER BLOOMING.—The *Evening Post* gives the following list of roses for in-door blooming in winter, most of which are tea-roses. "Sunset," orange shaded with crimson, and specially fragrant ; Perle des Jardins, Niphetos, Catherine Mermet ; Marshall Robert, Southern Belle, Souvenir d'un Ami, Bon Silene, Mme Cousin and Douglas.

AMARYLLIS.—Among winter-flowering bulbs the Amaryllis, in its various species and innumerable hybrids, takes a prominent place. In fact, it would be difficult to imagine a more beautiful and showy ornament to the window-garden than a well grown Amaryllis in bloom, and yet it is comparatively seldom seen by amateurs. There is not the least difficulty in growing it in the house, if its necessary wants, which are easily provided for, are complied with. The great point to observe in its cultivation is that the bulbs must have a season of rest after blooming, without being dried up altogether. This state is best produced by giving gradually less water until the plants have ceased growing, when only enough should be furnished to prevent their shriveling up. The bulbs should during their season of rest remain in the pots, in some dry place. As the roots remain on the bulbs all the time, taking them out of the pots to dry as is done with Hyacinths and Tulips, is a most injurious proceeding, which almost always results in non-flowering. A soil composed of well-decayed leafmould and sandy loam is best for Amaryllis, but it is not necessary to repot them every year. When wanted for winter flowering, the pots are to be brought to a warmer place, near the light, and gradually watered more frequently. The leaves, and with them generally the flower-stalks, will soon appear, when a full supply of water has to be given. If wanted for summer flowering outdoors, they should be kept dormant during winter, transferred to the open ground in spring, and taken up in autumn.—*Am. Garden.*

ERRATUM.

Page 36, second column (February number), for "species and color," read "It is size and color people are after."



SNOW BALL.

PAINTED FOR THE CANADIAN HORTICULTURIST.

THE

Canadian Horticulturist.

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[No. 4.]

THE SNOWBALLS.

The Snowballs. At that word, how are the fountains of memory's great deep broken up, and visions of days long, oh, how long gone by, come welling in like a flood. There they are, those grand old shrubs. It is early summer, and the large white balls are blending with the lingering Lilac's rosy purple. Their overarching canopy shades a rustic seat. There the children are, as of yore, wreathing gathered flowers. Perched among the branches, a glossy black-squirrel is watching with eager interest every movement. Now bounding upon the shoulder of his young mistress, he rubs his head coaxingly against her cheek, then plunges into her pocket to bring out a nut or sugar-plum for his comfort.

But thus it could not always be. The brother leaves the home so bright and sunny, and on the rustic seat carves for those remaining the words of the old Latin poet :

"Forsan' et hæc olim meminisse juvabit."

It may be in after days these shall be remembered with joy.

Aye, with joy. A sobered joy, for a minor chord is sounding through all the music of bygone days. Where now is

the home made attractive with Flora's brightest gems? Where now those merry peals of childhood's laughter? Where those children? The echoes answer, pealing through the corridors, memory's corridors, faintly and more faintly dying to a whisper, "Where?"

But the Snowball. Yes, the Snowball; yet is there any need to write of it? Is it not, gentle reader, even as your eyes trace these words, palpable to sight? An old familiar friend, into whose ear you have whispered profoundest secrets; upon which you have looked in each returning season with friendly interest and ever increasing pleasure; so wrought into your life's morning hours, and into your noontide's brightness, that it has become a part of your very being? Yet it may be that an added pleasure will be given to be reminded that it is a near relative of the twining Woodbine that covers your lattice; of the rosy pink Honeysuckle, whose bright flowers make the lawn so cheery in summer, and whose ruddy berries brighten the autumnal days; and of the pretty pure white Snowberry, heightening the beauty of their common cousin, the Redberried Elder, by the harmony of contrast? Yes, our

Snowballs belong to the Honeysuckle family, that family which unites in consanguineous bonds the houses of Linnæa, so charmingly represented by the lovely sweet-scented *L. borealis*; of *Symphocarpus*, known to us all by the Coral-berry and the Snowberry; of *Lonicera*, that climbing over our arbors fills them at eventide with delicious perfume, or standing erect upon the lawn brightens it with rosy-pink or golden-yellow flowers; of *Sambucus*, that so delights our boys, more by the softness of its white yielding pith, than with its blackish purple berries; and of *Viburnum* so numerous represented in our northern latitudes, to which our garden Snowball belongs.

The following members may be found growing within the bounds of our own Dominion:—

THE SHEEP-BERRY (*Viburnum lentago*), whose black berries are half an inch or more in length, will be well-known to most of our Canadian readers, who doubtless long ago made the discovery that the fruit is edible.

THE ARROW-WOOD (*Viburnum dentatum*), is common in wet places in our northern climate, and is readily recognized in the fruiting season by its small bright blue berries.

THE DOWNY ARROW-WOOD (*Viburnum pubescens*), is also found growing northward, usually in rocky places, as a low straggling shrub, the under side of the leaves, especially of the young leaves, softly downy, and the fruit of a dark purple color.

THE MAPLE-LEAVED ARROW-WOOD (*Viburnum acerifolium*), so called from the striking resemblance which its leaves bear to those of the maple, is found growing in rocky places, and yielding a crimson fruit, that turns to a purple color at full maturity.

THE CRANBERRY TREE (*Viburnum opulus*) grows from five to ten feet high in low grounds along the borders of streams. The flowers appear in cymes, of which the marginal ones are destitute of stamens and pistils, but whose corollas are much larger than the others, which gives a singular appearance to the cluster. The fruit when ripe is of a bright red, pleasantly acid in flavor, containing a flat, smooth stone. Where cranberries do not abound this fruit has been used as a substitute for those berries, whence the name of High-bush Cranberry applied to this species. Not very long ago it was extensively advertised by some enterprising dealers in fruit-bearing plants, and the value of its fruit for sauces, tarts, jellies, &c., abundantly set forth, especially for the benefit of those who were fond of cranberries but had no suitable place where to grow them.

Our Snowball, or as it is more usually called in England, the Guelder Rose, is this *viburnum opulus*, or cranberry tree, whose flowers have become all sterile, that is, all the flowers of the cyme have become destitute of stamens and pistils, and have taken on the large corolla, which was at first the peculiarity of the marginal flowers. The

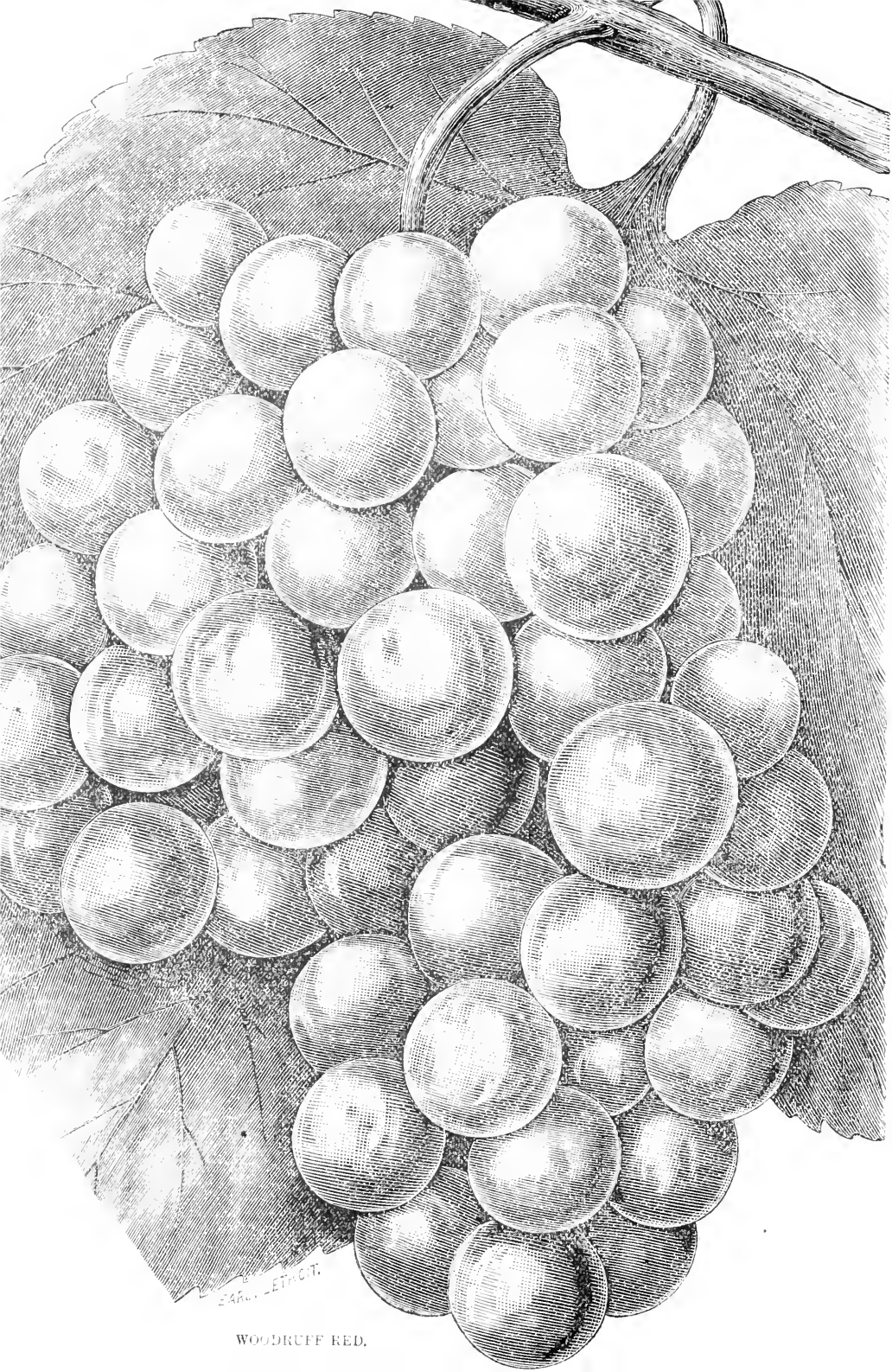
older botanists regarded the cranberry tree as a distinct species, and gave it the name of *Viburnum oxycoccus* or *Viburnum edule*; but later researches have established its identity as a cultivated form of the cranberry tree. It makes a large massy bush, whose branches bend gracefully to the earth beneath their load of showy snowballs.

THE AMERICAN WAYFARING TREE or Hobble Bush (*Viburnum lantanoides*) is deserving of more attention as an ornamental shrub than it has received. Its leaves are somewhat heart-shaped and hoary, its flower cymes very broad and flat, and its fruit of a rich dark red when ripe: so that both in fruit and flower and leaf it is highly ornamental. It is found in cold, moist woods as a straggling shrub.

Perhaps the time may come when we shall have somewhere in Ontario a collection of at least our *native* trees and shrubs, where the families shall be so grouped and the several genera and species planted together in such a manner that the student can at a glance perceive their points of similarity and contrast, and become so familiar with their several characteristics as to be able at once to recognize them wherever he may chance to meet them. It was natural to have expected that such a collection would by this time have been planted in the grounds of our Agricultural College, but although some little beginning has been made in this direction, the realization of such an arboretum is apparently in the re-

mote future. To the writer's mind it appears likely to remain there until some more permanent Governor shall be invested with control than the Commissioner of Agriculture for the time being, or the Government of the day, which may be wise or otherwise. Why the farmers of Ontario, in whose interests the Agricultural College is supposed to have been established, have not taken this matter into their own hands and insisted that this institution shall be fully equipped, properly officered, and controlled by men of well known ability in the several branches of agricultural pursuits, remains an unsolved mystery. This will never be done until they do.

But we were writing of the snowballs. There is yet another member of this genus which, though not native to our climate, seems to bear it well, and which on many accounts deserves to find a place among our ornamental shrubs. It is called the *Viburnum plicatum*. It comes to us from northern China. Its plaited leaves are of a most beautiful bright green, and its flowers are of pure white. Were it permitted us to give it an English name we should suggest that it be called the PLAITED-LEAVED SNOWBALL. It is this species that the artist has tried to represent in the colored plate which accompanies this number; but it is quite impossible to shew forth the purity of the whiteness of its flower as they appear in nature contrasted a heightened in beauty as they are the surrounding foliage.



L. E. H. - ET. C. T.

WOODRUFF RED.

FUNGOID DISEASES OF THE STRAWBERRY.

Mr. F. S. Earle, of Cobden, Illinois, read a very interesting paper on this subject before the American Horticultural Society, at its recent meeting in New Orleans. He states that he has observed ten different species of fungi infesting the strawberry plants of Southern Illinois, of which five proved to be new and undescribed species. Of the injurious fungi, the species known as *ramularia tulasnei* (Sacc), is the most important, occurring on wild and cultivated strawberry plants from New England to California. Its presence on the leaf is usually indicated at first by a reddish blotch, and later by a white spot about an eighth of an inch in diameter, surrounded by a reddish border, and remarks that the greatest damage ensues when it attacks the stems and calyx of the growing fruit. Thus far it seems to have caused more damage toward the southern and less toward the northern border of the strawberry belt. The only remedy proposed is dusting the plants with lime, which, he says, has been practised for some years by growers in Connecticut and Tennessee, with good results.

The next species in importance is *glæosporium potentillæ* (Ouds), which has perhaps as wide a geographical range as the other, and in its earlier stages is difficult to distinguish from it, but which instead of developing a central white spot, shews a number of very minute black pustules bursting up through the epidermis. This fungus has proved with Mr. Earle more

destructive, but fortunately so far restricted to limited areas and a few varieties. He knows of no remedy having been tried for this species. Mr. Earle's paper is one of great interest to all strawberry growers, and is well worthy of their careful perusal. It will be published in full in the forthcoming transactions of the American Horticultural Society.

WOODRUFF RED GRAPE.

This is said to be another Concord Seedling, ripening a little earlier than the parent, and considered to be worthy of dissemination for the reason that it is very hardy, a stronger grower than the Concord, remarkably healthy, never having been known to suffer from mildew or rot. The fruit is attractive in appearance on account of the large size both of bunch and berry, and its bright color; and it is said to be remarkable for its keeping qualities, having been kept in good condition until the middle of February. We have never yet tasted this grape, and therefore cannot give our opinion of its quality, but we understand it shows the usual characteristics of the *Labrusca* family to which it belongs. A fruit dealer says that it out-sells anything in the grape line he ever handled, bringing three times as much as the Concord every time. (See p. 76).

MINNEWASK! BLACKBERRY.

This is a new variety, originated by Mr. A. J. Caywood, of Marlboro', N.Y., and which is said to be wonderfully prolific, yielding very large berries, some of them measuring an inch in

diameter and an inch and a quarter in length, without core, seeds very small, and of an excellent and sprightly flavor. It will be offered for sale next autumn, and then our readers can procure the plants and give it a trial in our climate. We very much need a blackberry as hardy as the Snyder, of large size, great productiveness, without core, and of excellent flavor. Will we find it in this new sort?

A VERY DOUBLE BON SILENE.

Perhaps some day there will be a rose that will be fairly entitled to be called perfect. As yet our best roses have some imperfection, lack some quality that some other rose has. Rosarians are after a rose that shall combine in itself every desirable quality. Bon Silene was thought to be possessed of many excellences, having all that could be asked of a rose in beauty of bud, attractiveness in color, deliciousness of perfume, abundance of flowers; but, alas, it had one defect, the expanded blossoms were worthless, nay unsightly, especially when bedded out in the open ground. We now learn from the *Gardener's Monthly* for March that a sport from Bon Silene appeared, over a year ago, in the greenhouse of E. Hippard, Youngstown, Ohio, which is very double, in shape and thickness of petals resembling the Souvenir de Malmaison, in color and beauty of bud the old Bon Silene, and having a uniform dark rose color to the centre when fully expanded. When this rose is offered for sale, shall we be told that we have at last attained to a perfect rose?

THE BENNETT ROSE.

A correspondent of the *Gardener's Monthly* states that he has been to see this celebrated rose, which is owned by Mr. Evans, of Philadelphia, and reports that it is a very strong grower, the foliage large and bright, the color of the flowers much like that of General Jacqueminot, their size and shape like a good Niphetos, their fragrance unsurpassed by any Tea rose, and in beauty far exceeding the beautiful La France.

AMERICAN HORTICULTURAL SOCIETY.

At the last meeting of the Mississippi Valley Horticultural Society it was thought that the time had come for enlarging the field of operations, and taking a name indicative of the extent of the field embraced and the cosmopolitan character of the work to be overtaken. The transactions of the Society, now embracing two volumes, have been commended to the notice of our readers as they have appeared, as containing exceedingly valuable and practical papers, which could not fail to profit every fruit-grower and horticulturist.

The forthcoming volume will beyond doubt be full of practical information and suggestion, the papers contributed being from many of the most experienced and eminent men of the United States in their several departments. This volume will also contain a "Business Directory," consisting of a two-line advertisement, giving name and address and specialty, intended to embrace the leading fruit-growers, nurserymen, flor-

ists, seedsmen, gardeners, fruit-dealers, commission houses, canning and drying establishments, manufacturers of horticultural supplies, as implements, fruit and vegetable packages, labels, &c. There will be given in addition a list of the principal horticultural and pomological societies in the United States and British Provinces, together with the names of their officers. The Society is wholly dependent upon the fees of members and patrons to defray expenses. The membership fee is \$2.00 a year, the Directory fee \$3.00 additional. New members will receive as a present a copy of the Transactions for 1884 until the edition is exhausted, in addition to the forthcoming volume for 1885. Address W. H. Ragan, Secretary, Greencastle, Indiana, U.S.A.

SPECIAL NOTICE.

The Editor desires to express his thanks to those of his readers who so kindly and promptly responded to his request for a copy of the April number of Vol. V. He believes that he has sent Vol. IV. to all those who favored him with that April number and expressed a desire to receive Vol. IV. in return.

He now finds that he could supply the desire of some to obtain a complete set of Vol. V. if he could obtain three copies of each of the following numbers, namely, February, March, May, July, and December, and one for November, of the year 1882. He can send in return for any of these a complete set of Vol. I., or of Vol. II., or of Vol. III., or of Vol. IV., or any one of the following reports, namely, for 1873, or 1875, or 1876, or 1879.

Further, the Editor is under the impression that there is one or more

persons entitled to receive a copy of the book "EVERY WOMAN HER OWN FLOWER GARDENER" as a premium for obtaining new subscribers. There was considerable delay in procuring the book owing to the edition having been exhausted, but they have now been received, and meanwhile the memorandum has been mislaid containing the names of those entitled thereto. Will you who are entitled please send your name and post-office address on a postal card to the Editor, that he may send the book to you at once.

McLAUGHLIN PLUM.

Mr. Gibb, writing from Como, Province of Quebec, says that the McLaughlin Plum stands our climate well; Mrs. Caustin, of Lachine, has fruited it for several years.

NEXT WINTER MEETING.

The Stratford Horticultural Society has sent an invitation to the Fruit Growers' Association of Ontario to hold the next Winter Meeting of that Association in the Town of Stratford. This invitation will be submitted at the Summer Meeting to be held in Uxbridge.

QUESTION DRAWER.

DEAR SIR.—Are the Snider and Wauchusett Thornless Blackberries suitable for this locality. Please answer through the *Canadian Horticulturist*.

THOS. H. MILLER.

Askin P. O.

REPLY.—The Snyder will surely stand your climate; the other is not as hardy, but may do well. Try a few plants, and report your experience to the *Canadian Horticulturist*.

I like the *Horticulturist* very much, and the annual report is worth the dollar itself, without the premium or monthly magazine. I have been trying to send you a new subscriber, but have not been successful yet.

Please mention about four of the (1) best kind of strawberries suitable for a loamy soil—a soil which grows too much straw for profitable grain raising, and the (2) best black cap and (3) red raspberries for the same soil, in the March number, if you receive this in time. We live about ten miles north and ten east of Toronto. The thermometer has registered as low as 26° below zero this winter. That is about the lowest we ever have it.

Wishing yourself and the Fruit Growers' Association success in the highest degree.

P. BREAK,

Box Grove, York Co., Ont.

REPLY.—(1). Wilson, Crescent, Arnold's Pride, Manchester.

(2). Doolittle, Ohio, Souhegan, Mammoth Cluster.

(3). Highland Hardy, Turner, Philadelphia, Cuthbert.

These are given with reference to your climate as well as your soil.

CORRESPONDENCE.

CATALPA SPECIOSA.

SIR,—In the autumn of 1882 I purchased three *Catalpa Speciosa* from St. Catharines Nurseries, which I planted in a sandy loam, one of them on the north side of a high board fence. They have all made excellent growth and stood the severity of the last two winters well, so I have no fear but what they will be all right next spring. One of them flowered the first season, but none since. Hot winds seem to shrivel

up their immense leaves that have such a beautiful bloom, but the first cool day they quite revive. I think your correspondent from Lindsay can safely plant them.

Yours truly,

L. H. KIRKBY.

Collingwood, Feb. 26th, 1885.

WHERE MAY GRAPES BE GROWN?

Any one who takes an interest in the development of the fruit-growing industry must experience a sense of great gratification at the results attending the experiments in grape growing (although on a small scale) in so many places in the interior of this Province, where, until within a few years, it was supposed to be impossible to grow this most desirable fruit.

The fine exhibits of well grown and highly flavored grapes which have been made at so many local exhibitions in the more central parts of the country during the past season show that this branch of fruit culture may in the near future prove to be one of the most profitable, as well as one of the most pleasant occupations, for large numbers of our rural population over an extensive tract of country hitherto supposed to be unsuited to that purpose. The part of Ontario to which I refer especially (and I believe there are many other districts even more favorably situated), extends from the neighbourhood of Kingston in a westerly direction up the Bay of Quinte; from thence up the Trent waters to Balsam Lake, and across the height of land to the southern end of the Georgian Bay.

Let us for a moment consider what are the conditions necessary to this end, then we need not be surprised at the results. First.—Suitability of soil. Most authorities agree that the soil best suited for this purpose must be light, porous, friable, dry and warm. Along the course indicated, embracing

large tracts on both shores of the Trent waters, and also a large portion of the land near Lakes Simcoe and Couchiching, and also westwards from Lake Simcoe, there are thousands of acres which cannot be excelled for this purpose in any part of this Province. But the most important factor to be considered in forming an estimate of the probabilities of success is the meteorological conditions of such localities; and it is in this particular, as may be learned from the following table, that much of this large area has advantages over some of the more southern portions of the Province, inasmuch as during the period between the latest frosts in spring and the earliest in autumn severe enough to injure the crop, the atmosphere over these parts is much hotter and dryer during the daytime than over much of the more southerly portions:—

AGGREGATE OF MONTHLY MEAN MAXIMA
TEMPERATURE at the following places from
May 16th to September 30th inclusive, for
the years given.

PLAC'ES.	1880.	1881.	1882.	1883.	1884.
Welland				357.16	362.91
Oshawa				343.37	369.43
Toronto	369.05	374.33	354.82	343.80	359.36
Deseronto				364.19	376.92
Lindsay	377.93	385.90	363.27	346.24	375.03
Barrie	367.24	375.62	361.40	349.73	360.88
Gravenhurst.	372.56	380.24	357.10	347.99	369.80

From personal observation during many years, taken in connection with the material from which this table is compiled, I am of the opinion that during the seasons included in the four and a half months referred to, an aggregate maximum temperature of 350° is the minimum of heat required to ripen the earlier varieties of grapes, and that at least 10° of additional heat is necessary to ripen the later varieties, such as the Concord, and others ripening a few days after that variety.

The summer of 1883 will long be remembered by vineyardists as being a very unfavourable season for the grape crop. By referring to the above table it will be seen that the aggregate of 350° of heat was exceeded only at Welland and at Deseronto during that season, and even in the Welland district the heat was not sufficient to ripen the late varieties before the 1st October. North of Lake Ontario the heat was not sufficient to ripen the earlier varieties in either of the localities given but at Deseronto; at which place the climate (judging from the observations recorded during the last two years) would seem to be peculiarly suited to the successful growth of the grape vine.

If the conclusions here arrived at are correct, then people in any locality may easily ascertain if that place is suitable for the successful cultivation of the grape plant, and the answer to the question, "Where may grapes be grown?" will be:—Where the soil and situation are suitable; where there are no spring frosts after the 15th of May; where there are no autumnal frosts earlier than the 1st of October more severe than two or three degrees below the freezing point on an occasional night, and where the maxima temperatures of the several months between the dates given shall at least be three hundred and sixty degrees, *i. e.*, that from the 16th of May to the 1st of October—138 days—the maximum daily temperature must average over 72° . Throughout this tract of country, extending nearly 200 miles from east to west, and ranging in width from 5 to 20 miles, many thousands of acres of land may be found where the quality of the soil and its exposure are eminently suited for this purpose, and of but little value for ordinary agricultural purposes, and where the climatic conditions favor the growth of our

quick ripening varieties of grapes to such a degree that we may soon expect this industry to become one of our most extensive and most profitable branches of horticulture.

This statement will appear more probable when we compare the climate of some of the wine-producing districts of France and Germany, taking Paris as a centre from which to obtain reliable meteorological information with that of Toronto and its outlying districts. From "The Atmosphere," by E. Flammarion, we find that the average mean temperature of the summers at Paris for the 30 years from 1841 to 1870 inclusive, was 64.52° , and from "Abstracts and Results," issued from the Meteorological Office at Toronto, that the average mean temperature at that place for the same period was 65.05° . From more recent records we find that the average mean temperature for the last 5 years at Toronto was 65.42° ; at Lindsay, 64.39° ; at Barrie, 65.75° ; and at Gravenhurst, 64.01° .

The mean temperature, however, as before shown, is only one of the factors necessary. The length of the season is of equal importance, and it is in this particular only that the wine districts of France and Germany have any advantage over this country. Frosts in May and June are more frequent and more severe than in any portion of this district. There the season for commencing spring operations is several weeks earlier than with us; hence the chief reason why the varieties grown there cannot be grown in the open air in this country. The rain-fall in the wine districts referred to is about the same as in Ontario; but such intense midday heat as so often prevails in some of the inland portions of this Province is very rare in the wine districts of France and Germany.

Let the facts be established by experiments on a fairly large scale that

suitable lands for vineyard purposes are plentiful over this large area, and that the climate is all that is necessary to insure—under proper management—healthy cane growth and well ripened fruit in average seasons, then men of experience having capital to invest will soon revolutionize the grape market. And that these facts will at an early date be established is evident from the success attending the efforts of such men as Mr. P. C. Dempsey, at Murray; Mr. J. W. Johnston, of Campbellford; Mr. T. C. Chapman, at Baltimore; Mr. John Knowlton, at Sturgeon Point; Mr. P. Bertram, Mr. H. S. Scadding and others at Orillia, who will in a short time place this question beyond doubt.

Since the foregoing was written my attention has been called to a most valuable paper on "A Few Canadian Climates," by J. Gordon Mowat, Esq., and published in the Proceedings of the Canadian Institute for July, 1884, the last paragraph of which, and also the "Note" is hereto subjoined, and to which (in the table) I have added the average monthly means for the last 5 years—1880 to 1884 inclusive—of Lindsay, Barrie and Gravenhurst:—

"By a British standard the summers of much of the Province may be considered long. May in south-western Ontario is warmer than July at Edinburgh; September is warmer than July in London, and warmer than September at Vienna. The vine, maize and sorghum fully mature in most parts of the Province south of the 46th parallel, and in not a few districts yield as abundantly as in any part of America or Europe. The limitations on the cultivation of the vegetables of similar latitudes in Europe is more in the intensity of the winter frosts than in the lack of a sufficiently long or warm summer."

"NOTE.—The length and heat of Ontario summers contrasted with those of other places in Canada, and various places in Europe, may be seen by a glance over the following table. The means for Toronto, Hamilton, Windsor and Winnipeg are de-

rived from the annual records of the Canadian Meteorological Service for eight years (1874-81); those from Montreal from same records for six years (1875-80); those from Pelee from C. M. S. station reports for three and a half years. The averages for European stations are quoted from Blodgett's "American Climatology," and are for periods, with few exceptions, longer than eight years."

MONTHLY MEANS OF CANADIAN SUMMERS.

	May.	June.	July.	Aug.	Sept.
	°	°	°	°	°
Toronto	54.2	62.6	69.6	67.8	60.3
Hamilton	57.6	66.0	73.4	71.3	63.9
Windsor	60.8	67.9	73.4	71.4	63.8
Pelee	59.2	67.1	73.5	72.9	66.3
Montreal, Que. .	55.9	65.0	69.8	68.1	59.0
Winnipeg, Man. .	52.9	61.8	67.3	64.1	51.9
Lindsay	52.8	61.7	65.6	65.6	59.2
Barrie	53.4	62.8	67.4	67.0	60.5
Gravenhurst	52.8	61.7	65.4	64.5	58.1

MONTHLY MEANS OF EUROPEAN SUMMERS.

	May.	June.	July.	Aug.	Sept.
	°	°	°	°	°
Edinburgh	50.3	56.0	58.7	56.8	53.4
Aberdeen	52.3	56.7	58.8	58.0	54.6
York	54.5	59.2	62.0	61.1	55.7
London	55.8	58.7	61.7	58.9	56.6
Dublin	54.4	60.2	61.5	61.4	56.5
Paris	58.1	62.7	65.6	65.3	60.1
Rochelle	59.4	67.5	69.0	66.5	62.4
Vevay	58.2	64.4	68.4	64.4	59.6
Munich	57.6	62.1	64.7	64.1	58.1
Berlin	56.5	63.3	65.8	64.4	58.4
Königsburgh ..	52.0	57.4	62.6	61.7	53.6
Vienna	62.1	67.5	70.7	70.0	61.9
Bucharest	56.3	62.5	68.1	65.2	58.3

THOS. BEALL.

Lindsay, January, 1885.

SCAB ON THE APPLE.

DEAR SIR,—At the winter meeting of the Fruit Growers' Association held at Woodstock, I consented to act as one of a committee appointed to conduct a series of experiments to test the value of sulphur and sulphur compounds as preventives of the black scab on apples. The varieties that I experimented with were the Swaar and the St. Lawrence. I applied flour of sulphur in the proportion of one pound to twelve gallons of water at two different times. The first application the

young apples were about the size of marbles, and two weeks after the first application I showered them for the last time. When I gathered my apples I could not detect any material difference between those to which I applied the sulphur and those of the same varieties that I did not; both to all appearance being equally affected by the scab.

Yours truly,

S. CORNWALL.

Norwich, Oct. 31, 1884.

THE RUST ON THE BERBERRY.

The following correspondence on a much vexed question is published in the hope that some one may be able to contribute something tending towards its solution:

WROXETER, Nov. 28, 1884.

Geo. Leslie & Son.

Dear Sirs,—Enclosed find your letters from Messrs. St. George and Beadle. I thank you for the opportunity of perusing them, also for the trouble you have taken in supplying me with much valuable information on this very interesting subject. Mr. St. George's determination to institute a number of experiments next summer, to ascertain whether the rust, natural to the one, can be cultivated on the other, is, in my estimation, a very important step. If carefully conducted, it will do more to settle this question than any other method that could be adopted. I hope Mr. St. George will make public the result of his experiments.

Very truly yours,

S. B. SMALE.

OAKRIDGES, Oct. 20, 1884.

Dear Sir,—I have yours of the 27th and Dr. Smale's, which I enclose. I have for a number of years planted Berberry hedges, and cannot find any con-

nection between the rust in Berberry and wheat or oats. Dr. Smale says his wheat this year was badly rusted near the Berberries, but not elsewhere. He does not say how his fields are situated. I and many others have noticed that in places sheltered by a belt of trees or otherwise, the wheat was often badly rusted, when parts of the same field where the wind had free access were but little or not at all rusted. This year, on the ridges, we have been very free from rust, whereas I have seen a great deal of it in other parts where probably there was not a solitary Berberry within miles. As for oats, in former times, before I had any Berberry hedges, we had a great deal of rust. Since we have given up the common black oats for the white, I have not seen any rust at all, although there are Berberry hedges all around. I must also say that there is very little rust on our Berberries at any time, and you must search pretty close to find some, and will not always succeed. I have never tested it personally, but often heard it said in England, that by microscopic investigation you could ascertain that there is no connection between the rust proper to wheat and to Berberry. In London's (*Arboretum et Fruticetum*, vol. 1, page 302) article, Berberry, I find the plant makes an excellent hedge; but there exists a prejudice against it amongst the agriculturists from its supposed influence in producing blight or mildew on the corn adjoining it. This opinion, though totally unfounded, is of unknown antiquity. It appears to have been first considered as an erroneous prejudice by Dr. Hamel, who assures us that it is totally void of foundation; and Broussonnet and other botanists subsequently proved the fact. But the most scientific refutation of the error was given by Dr. Greville, in the *Scottish Cryptogamic Flora*. In that ex-

cellent work, Dr. Greville has shown that the mildew which attacks the Berberry (*Elcidium Berberidis*) is quite different from the fungi which are found on corn: the Berberry mildew, when magnified, is found to consist of a number of small orange cups, with a white film over each when ripe; these films burst and the top of the cups assume a ragged, uneven appearance, in which state they look like white fungi; the cups are filled with innumerable little cases containing seeds or sporules, and these constitute the bright orange powder which is seen on the leaves and flowers of the common Berberry. Among the many beautiful objects that are to be met with in the lower and more imperfect tribes of plants, Dr. Lindley observes: "It is difficult to find one more worthy of an attentive examination than the *Elcidium Berberidis*." The blight on corn is generally a species of *Aredo*, and does not correspond in botanical character with the *Oidium*. Still it is an important question, as we must at some future time, owing to the increasing scarcity of timber, have recourse to hedges to enclose our fields: wire requires posts, is very expensive, and not at all satisfactory. Other hedge plants, even when efficient, require constant attendance, and do not suit every soil. The Berberry, when, after a few years, the stems are about half an inch in diameter, and five or six feet high, surrounded by innumerable suckers, is a fence which no bull or mouse can face, and requires no attendance at all. I never trimmed or pruned any of mine. It might be barely possible that besides suffering from its own proper rust, the wheat is liable to be attacked by the *Elcidium Berberidis* when it is blown on it from neighboring plants, this I will take care to ascertain for myself next summer, if any rust is to be found on wheat, and there always is more or less of it every

year. I will carefully compare with a microscope: trace one on the Berberry itself and on the wheat near the Berberries, and also on wheat at a great distance from any Berberry plants, and will have much pleasure in communicating to you the results of those observations, which I trust might be conclusive.

Very truly yours,

H. QUETTON ST. GEORGE.

Geo. Leslie, Esq., Leslie P. O., Ont.

CUTHBERT AND GREGG RASPBERRIES.

The Cuthbert now stands at the head of the red raspberries, and the Gregg occupies the same position among the black caps. These stand head and shoulders above their competitors. They have many valuable characteristics in common. Both are rampant growers. Both produce very large, firm fruit, that can be sent to distant markets, and will not shrink much in canning or drying. Neither of them ripens very early. Neither of them produce the very finest fruit in either appearance or quality. The Cuthbert, however, gives handsome fruit, of good quality. The dry quality of the Gregg really adds to its value. Both Cuthbert and Gregg are very productive. Both of them retain their fruit for some days after it is ripe, which adds much to their value. Fruit ripe on Saturday may be left until Monday. A rain-storm often destroys many berries of other varieties. Both varieties disappoint the pickers, because the beautiful berries do not readily leave their stems. Both varieties lengthen the season. The Cuthbert extends the season for about fifteen days. There are some points of difference. The Cuthbert will, I think, flourish upon a variety of soils. The Gregg is somewhat fastidious. The Cuthbert is, I think, as hardy as any red raspberry, except perhaps the Turner. It is

thought that the Gregg in hardiness as well as in quality is beaten by the Mammoth Cluster and several others. We now want earlier varieties, equal to the Cuthbert and Gregg. Many claimants are in the field. It remains for them to prove their claims. For family use, berries softer and better than the above are obtainable. Many sensible families, however, prefer to risk the best market varieties.

Niagara Falls, South.

E. MORDEN.

BLOSSOMING OF FRUIT TREES.

The profusion of blossoming on the majority of our cultivated fruit trees is really no indication that a corresponding crop of fruit will follow. Various causes may be assigned, but the most probable is that in deviating from the original condition of things consequent upon cultivation, eccentricities may be looked for both in the blossoms and fruit; part of the blossoming may be abortive, and a preponderance of pistillate over staminate blossoms, or *vice versa*, may occur, and the size of the fruit at the expense of the quantity. The nearer the approach to the original types, abundant fruit corresponding to the blossoms may be calculated on—for example, the Siberian crab apple, the crab pear and the Guigne (*cerasus avium*)—but just as soon as a removal takes place another order of things is substituted, nature being interfered with.

The failure of the fruit crop generally may be attributed to various causes, late spring frosts and rainy weather just at the time of blossoming, but the chief and greatest cause is the absence of insects of the bee family just at the opportune time for the purpose of fertilization.

You may calculate to a certainty when you hear the hum of insects on a fruit tree that you are going to have

fruit on it in season, everything else being equal. SIMON ROY.

Berlin, 16th Feb., 1885.

THE GRIMSBY FRUIT-GROWERS' ASSOCIATION.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

DEAR SIR.—Having taken a few notes of the discussion at the regular Winter Meeting of the Grimsby Fruit-Growers' Association, I forward them to you, believing they may be of some interest to the readers of the *Horticulturist*.

The meeting was held on Friday, 27th February, and about fifty gentlemen were present, nearly all of whom took part, more or less, in the discussion.

For subjects of discussion the meeting was almost wholly dependent upon a "question drawer." This method was very successful, being the means of bringing up just those subjects most interesting to members present.

The first question was, "*Is there a more profitable grape than the Concord?*" Mr. Smith said the Concord is the most profitable grape for neglectful people, but other kinds are better for those who take proper care. We could make more money, for example, out of a good packing grape, as perhaps the Vergennes. Dr. Millward thought that in the near future the Concord would be displaced; first by an earlier grape, and second, by a later grape that would keep. Mr. Orr said the Champion has paid him better than any other grape he had grown. The Delaware had paid him better than the Concord. He had averaged only about 4c. per lb. for Concords, which was too low a price for profit. Mr. Cline thought Niagara or Pocklington promised to be far more profitable than the Concord. Mr. E. J. Woolverton, the president, said that this year the Pocklington had paid him better than the Concord by 50 per cent.

Mr. Murray Pettit, a prominent grape culturist, said if the Champion were planted extensively, as the Concord is, they would be a drug on the market. The market could soon be glutted even with Moore's Early. The Delaware, as a rule, does not receive sufficient care from growers to make it profitable. It requires great quantities of manure. He attributed his success with them to a compost in which the most important element was dead horses. *Grapes for packing*, too, might soon overstock the market. And so even with the Niagara or Pocklington. If planted in large quantities, the market might soon be as full of white grapes as it now is of black.

The next question was, "*What action has been taken by the Municipal Council to stamp out the Yellows, and what course should be taken to aid in the accomplishment of this object?*" Reports were received by members of the Village and Township Councils, from which it appeared that inspectors were annually appointed, who did their work well, but the difficulty was that many owners of orchards would neglect to destroy the trees even after they were marked by the inspector. A resolution was passed to encourage the Councils in compelling owners to destroy diseased trees.

The question next taken up, is perhaps the most prominent one just now in the minds of the fruit-growers about Grimsby, viz., "*Is it advisable, after the experience of the last three years, to continue planting Peach trees in this section?*" With this question was also coupled a second, viz., "*What proportion of Peach fruit buds have survived the winter?*" The writer being called upon to introduce the subject, said he would not be entirely discouraged in the culture of the peach. He would, however, plant on a much more limited scale, and give more room to small fruits, grapes, &c., instead of depending so largely on an uncertain crop. He ex-

hibited some peach boughs, and showed that about one-fourth of the fruit buds had apparently thus far survived the winter, and therefore a few peaches might reasonably be expected this season. Mr. D. Vanduzer had not previously been able to find any live peach buds, but had been to-day convinced there was a small proportion. Mr. W. H. Nelles thought that three crops of fruit was about all that could reasonably be expected from a peach orchard. In planting ten acres, he would give a very small area indeed to peach trees. Mr. Orr said, if he had not seen a live peach bud this season, he would not give up peach culture if he lived in the Grimsby section. (Applause.) It was generally conceded that the "Yellows and Curled-leaf" were more discouraging features of peach-growing than cold winters.

To the question, "*What was the cause of the failure of the Plum crop in this section last year?*" Mr. Cline said the crop had not failed with him. He had Paris-greened his plum-trees four times with three ounces Paris green to forty gallons of water. The opinion prevailed that the Curculio and not the winter had caused the failure.

The two following questions were grouped in one, viz., "*Is there any danger of overstocking the apple market?*" and "*What varieties of apples would you recommend for profit, in planting 500 trees?*" The writer being asked to reply, said, on the whole, the prospect is encouraging. It is not probable that the area devoted to the apple in England, France or Belgium will ever be much larger than at present, and, therefore, the foreign demand for Ontario apples will probably never be less than it now is. Besides this, the cities West and South are beginning to look to Ontario for their supply of good keeping apples. In reply to the second question, he gave the following list of

500 apple trees for profit, viz.: Red Astracan, 50; Duchess of Oldenburg, 50; Baldwin, 200; Rox Russet, 100; Golden Russet, 100. He would omit the Early Harvest, Rambo, Fall Pippin, Greening, and Northern Spy on account of the black spot which was gradually coming upon them; the King, because it bears such light crops, and the Cranberry Pippin because it is often so misshapen. Mr. A. H. Pettit gave the following list for 500 apple trees: Cranberry Pippin, 150; Baldwins, 150; Colvert, 25; Golden Russet, 75; Greening, 75; Rox Russet, 25; Northern Spy, 50; Astracan, 20; Duchess, 20; Ribston Pippin, 10.

The following questions were also discussed, in addition to many others, viz.: *What varieties of Raspberries and Blackberries are most profitable? What damage is to be feared from the Pear Slug? Would you recommend the planting of Pear trees at present high prices? What varieties of Quince would you recommend for general cultivation?*

And now, Sir, that I have given you a brief account of our meeting, I want to ask whether the Ontario Association could arrange for some kind of relationship between such smaller associations and itself. Certainly it would contribute very much to the success of such meetings as this one, if some delegate from the Fruit-Growers' Association of Ontario could be present to give us the benefit of his counsel upon the subjects under discussion; and for this, I am sure, no one would be more welcome than yourself.

L. WOOLVERTON.

RASPBERRY SAW-FLY.

The raspberry saw-fly (*Selandria rubi*) is not a difficult insect to keep in check if noticed in time. It is very inconspicuous on account of its colour and appearance. A weak mixture of about an ounce of "hellebore" to a

pailful of water syringed onto the plants will easily destroy the larvæ. This should be done in the beginning and middle of June and is quite safe.

Yours obediently,

J. FLETCHER,

Ottawa, Feb., 1885.

Entomologist.

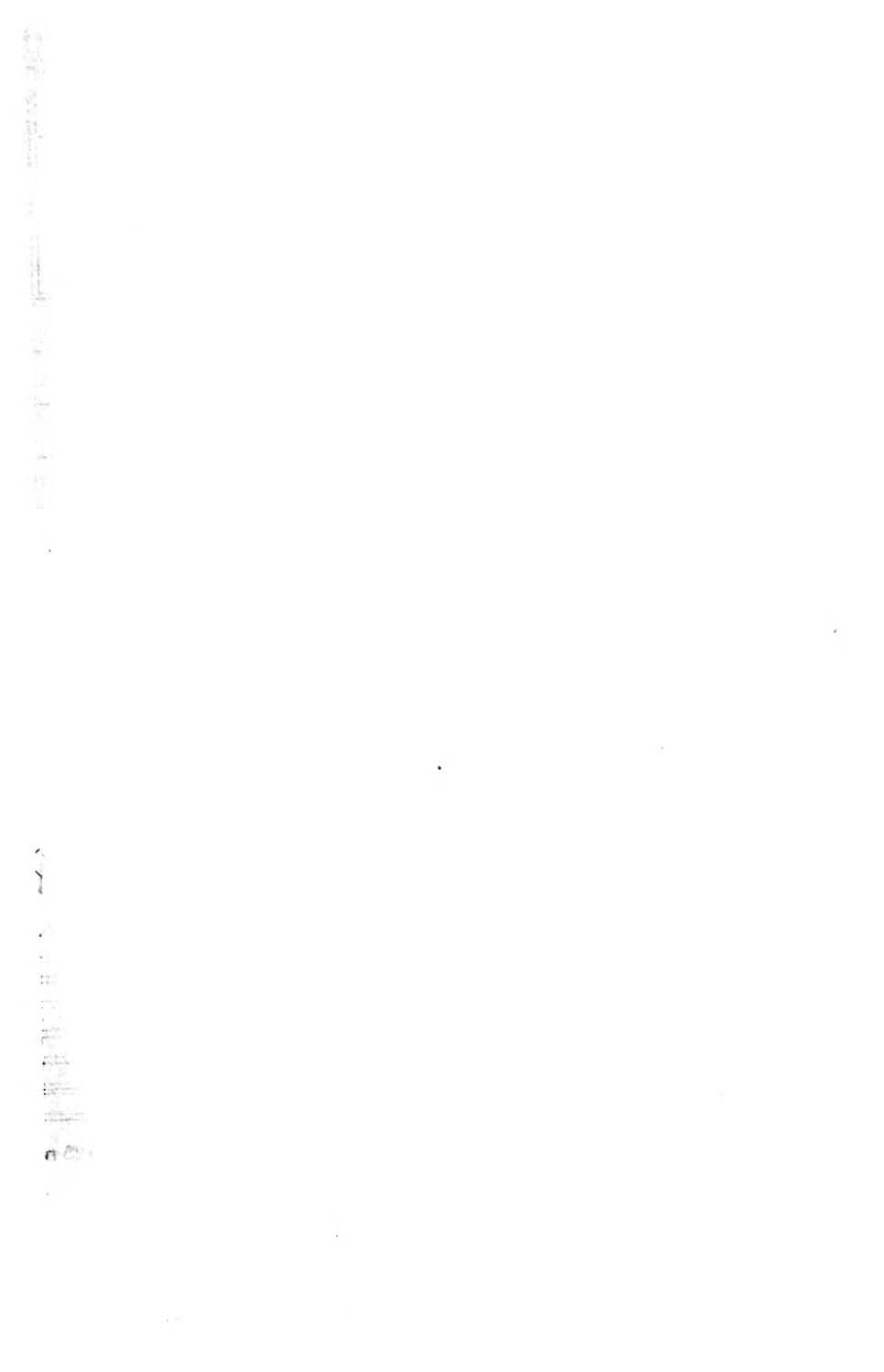
A SMALL GREENHOUSE.

The following is a plan of a small amateur greenhouse, that may be acceptable to some of your readers, from Part 5, "Amateur Work; or, Help and Guidance for Self-helpers; Every Man his own Mechanic."

A convenient size for the house (including the potting-shed, which is at the north end), is about 18 feet long and 8 feet wide, outside measurement. In referring to the drawing, it will be seen there is a ground-plate running all round the base; this is lettered A A, and is $1\frac{1}{2}$ inches deep and 5 inches wide, and is formed into a frame 8 feet 1 inch wide and 18 feet 1 inch long. Securely fastened at the corners, there are four upright posts, C, which are 4 inches square; these are kept in a vertical position by eight struts, J, which greatly help to stiffen the framework, until the boards are fastened over it. The space between the end posts is divided on either side of the house into five equal spaces by four posts, three of them, D, being 4 inches by 3 inches, and the fourth, marked X, 4 inches by 4 inches. This latter divides the potting-shed from the greenhouse, as shown in Figs. 2 and 5. These are all 4 feet 9 inches long, and as they are mortised into the wall-plate at the top, and the ground-plate at the bottom, each of which is $1\frac{1}{2}$ inches thick, the space between the wall-plate and the ground-plate is 4 feet 6 inches; the wall-plate, B, is 4 inches wide. Six other posts, D, 7 feet 4 inches long, 3 inches thick, and

4 inches wide, must be provided. These are all mortised at one end to the ground-plate, and at the other are nailed to the rafters, E. Of these two at either end form the door-posts, of which the door-ways are 6 feet 3 inches high by 2 feet 3 inches wide. The rafters, lettered E and F, are nailed at one end on the wall-plate, and on the other to the ridge-board, H, which is 18 feet 3 inches long, 6 inches deep, and 1 inch thick. Those lettered F of the form shown (Fig. 7) which represents the actual size of the section, they are all 4 feet 9 inches long. These rafters can be purchased of the section shown, and should be all carefully placed at equal distances (see Fig. 2) when the width must be measured and the glass ordered accordingly.

To ventilate the house, about 9 inches next to the ridge-board on one side should be unglazed, and the space covered with half-inch board, hinged in four lengths opened from the inside, as shown at L (Figs. 3 and 6), and the same must be adopted at the bottom of the opposite rafters, where four lengths of boards M are hinged to the wall-plate B. The house should be glazed with glass 16 ounces in weight to the square foot. With regard to doors the amateur had better get them made by a carpenter to look well. The framing of the sides must be covered with $\frac{1}{2}$ or $\frac{5}{8}$ inch boarding tarred or painted on the outside, and the space between the inner and outer boards filled with sawdust, which is a slow conductor of heat. As the house that has been described has a span roof and a door at each end, zinc or iron guttering, supported on brackets, must be placed immediately under the eaves along the front and back. A sliding pannel in the partition between the potting shed and the house will be found useful for passing in newly potted plants, &c., without carrying them round in the front of



the house. The stage, marked K, is 2 feet 5 inches wide, and 2 feet 9 inches or 3 feet high, as will be seen in the drawings.

T. A. H.

Muskoka.

THE ENGLISH SPARROW.

It is very gratifying to see from time to time some honest evidence in favor of that plucky little emigrant from my native country—the English Sparrow. Mr. Roy, of Berlin, is the last witness, and his evidence is published in the February number of the *Canadian Horticulturist*, present volume. The evidence given by that gentleman is of that character which should commend itself to future witnesses who have due regard for their good name in the future. Mr. Roy freely admits the evil propensities of the poor little stranger, which, no doubt, is the result of the improper training of his progenitors; but at the same time boldly and fearlessly gives him credit for his good qualities, not even forgetting his musical talents. Mr. Roy is a model witness. Many persons when giving evidence allow their partizanship to outrun their veracity. They think they make a good point at the time, but do not receive much credit for their truthfulness when the published report of that evidence turns up for review on some future occasion. A good example of this kind of evidence will be seen in the following excellent story copied from the last volume of the *Country Gentleman's Magazine*, under the heading of "Agricultural Arithmetic."

"Referring to the Nairnshire Farmers' Association for the destruction of Rooks, which gives a penny a head for every Rook slaughtered, a writer in the *West Cumberland Times* opportunely recalls a conversation which took place in the House of Commons Committee on the Game Laws in 1845, between Mr. John Bright and Mr.

Grantley Berkeley. Mr. Berkeley stated that in districts unfrequented by Rooks, boys were employed as a substitute to hunt for that destructive foe of the farmer, the wire-worm. The boys, said Mr. Berkeley in reply to Mr. Bright, were paid at the rate of three-half-pence per hundred for the number of wire-worms they destroyed. On being asked how much a boy could earn at this rate of payment, he said 'ninepence per day.' Questioned as to the number of worms a boy would destroy per day in earning the ninepence, Mr. Berkeley found himself in a quandary, and judged that the best way to get out of it was to get into a rage, which he accordingly did. 'I am not here,' he said, 'to answer intricate arithmetical questions.' 'If a boy makes 9d. per day in destroying wire-worms at the rate of 1½d. per hundred, how many must he destroy per day? If you find that problem too intricate for you,' continued Mr. Bright, 'will you tell us whether a boy can do the work as well as a crow?' 'A crow is worth fifty boys at such work,' replied Mr. Berkeley. This was rather startling information. The matter was getting to be more interesting as the inquiry proceeded. So Mr. Bright appeared to think, as he pursued the witness with a further question. 'If a boy is worth ninepence per day in destroying wire-worms, and a crow is worth fifty boys at the work, how much is the crow worth in sterling money?' Again Mr. Berkeley was disposed to reply by getting into a rage. But his inquisitor was not to be outdone. Paper, pen and ink were supplied, and Mr. Berkeley was assisted in his calculations, when it was discovered that the crow was worth to the farmer nearly £2 per day. 'The bird being worth nearly £2 per day, what may be its yearly value?' was the next query. 'About £700,' answered Mr. Berkeley.

He had before said that fifty would be a low average number of crows for each farm in some districts, and he was now finally asked, 'What is the aggregate value per year to the farmer of his proper quota of these useful birds?' This, we are told in the narrative, evolved the most startling conclusion of all, for it appeared that the farmer was a gainer of £35,000 per year by his fifty crows!"

What the verdict of the public *amen* the Sparrow in this country may be, after hearing all the evidence which may be produced is, of course, difficult to foresee at present. For my own part I have nothing against him. He has never disbudded *my* cherry trees, nor any other of my fruit trees or bushes; and I am free to acknowledge that I entertain for him a good deal of affection, especially when I see what a comfortable living the poor little exile obtains by his great energy and perseverance, under adverse circumstances, during our long cold winters. I never yet heard him making any complaints about our climate, nor wish himself "back home again;" and I must say I fully appreciate his musical talents, although not of a high order.

In England, however, I regret to hear that he has been convicted, after mature deliberation, of wholesale robbery of crops, and that the decree for his destruction, countersigned by Miss Ormerod, the Entomologist of the Royal Agricultural Society, has been promulgated. They may find it difficult to execute the warrant.

THOS. BEALL.

Lindsay, February, 1885.

BLACK KNOT.

In your February number we notice an article having the above heading, written by R., from Berlin. I presume Ontario. He traces the cause of the Black Knot to fungoid epidemic. Scientists differ widely in opinion in regard to

the origin of this infection of the plum tree. It is only of late years we have had anything to do with this infection, or, indeed, knew anything about it. After giving it close attention since its first appearance up to the present time, we fail to fall in with the idea that it is a fungus formed on the bark of the plum tree, or even the common red cherry tree, which was so badly affected with it the past year.

Fungi formed on vegetables, either in a healthy state, or in a state of decay, will not produce the effect that we find resulting from the Black Knot. The fungoid excrescences formed on plants and fruits arising as an aerial epidemic, or from the nature of different soils, either natural or cultivated, in order to produce the fungi, such as the mushrooms and toad stools, have no resemblance whatever to this so-called "fungoid epidemic" (Black Knot). The Black Knot will take all varieties of plums, if you only give it time to do its work completely. This only needs time, and our neighbors to let it alone and not interfere with its ravages; but it seems to be especially fond of the blue plum, next the common red cherry tree. I hear in some sections of country that a similar knot is appearing on the apple tree, but we cannot vouch for the truth of this statement. We will wait for a further development of this.

The insect (and an insect it is) which causes the Black Knot makes its appearance in June. If you should examine the limb affected closely, you will find a small puncture which has the effect of poisoning the bark; and around this puncture, this substance begins to grow, and continues until the egg deposited there hatches and begins to live on this growth. When this grub becomes nearly full grown, this ceases to spread, dries up and turns black, hence the term Black Knot.

This knot should be removed immediately on being found. If it should make its appearance on a part of the tree you would not like to take off, cut the knot closely, and cover the wound with wax, the tree will sustain no serious injury. There is no need of burning the affected part when removed, if the insect has not arrived at its chrysalis stage; if it has, be sure and destroy the knot. When you find the knot turning black on the tree, cut it open, and you will find these grubs in full blast. If we would conquer this pest, every man must set to its destruction and not leave a single insect, as one insect on wings can produce hundreds of knots.

Yours respectfully,

W. C. WEBSTER.

Stoney Creek, Ont.

Will Mr. Webster please send a specimen of the insect that makes the puncture and lays the egg, which, in his opinion, causes the Black Knot, to the Editor, or to Mr. W. Saunders, London, as soon as they appear next season. By so doing he will contribute largely to the settlement of a much vexed question.

CERTAIN ROSES, AS I FIND THEM.

MR. EDITOR,—I purpose, in response to your invitation, to send you a series of short papers or notes on flowers and their culture, most suitable varieties to grow, etc. And I wish to state to the readers of the *Horticulturist* once and for all, that any opinions I may advance will be based on my own practical experience *alone*, and although my opinions may not always coincide with those of others as regards certain plants or varieties, I wish at the outset to impress the idea that I am only stating

things as I have found them in my purely amateur experience.

I will devote this paper, and perhaps the following one, to roses best suited to the amateur, or those who grow roses for pleasure alone.

The greatest number of roses suitable for this that should be the greatest class of rose growers, is to be found among the hybrid perpetuals, and among these I would perhaps give the very first place to that grand red rose.

ALFRED COLOMB.

It seems to have more good points than any other rose of its class; it is moderately hardy, very large, of perfect form and color, is very fragrant, and a good and fairly constant bloomer. Marie Bauman, another beautiful red rose, very nearly resembles Alfred Colomb in form, color, and fragrance; but it is not so desirable because it is not as good a grower, and appears to be quite tender, mine having died out altogether. Marie Rady, a very fine red rose, also somewhat resembles Alfred Colomb, but the color is not quite as good, nor do I think that it is as constant a bloomer. There is no other among the red roses so constant in blooming perhaps as

GENERAL WASHINGTON,

and it is worthy of a place on this account, although it has many grave defects, the worst one being that so many of the flowers are misshapen or mutilated. The flowers being so very double they are often torn to pieces in opening; it is void of scent; the shape is rather too flat even when perfect, and the color is somewhat variable, sometimes (in unfavorable conditions of weather) being a deep, dull pink, while under more favorable conditions it is a most beautiful bright red. It is also a dwarf grower; but in spite of its many defects it is worth growing on account of its constant

blooming qualities alone, and although not nearly so good a rose as Marie Bauman or Marie Rady, yet it should be grown in collections where they might be left out, as it fills a place by itself, while the place of the others named can be so well filled by Alfred Colomb. Of course in even a small collection of roses it would not do to leave out the well known old favorite,

GENERAL JACQUEMINOT.

Although by no means a perfect rose, it has much to commend it. It is hardy, a good grower, of a very good bright red color, and it knows so well how to make the best of itself, bearing its flowers so gaily on its tall shoots above all the rest of the roses, that really at a little distance it looks the finest rose in the garden. Fisher Holmes is, however, a rose of more perfect form, and is apparently equal and similar to General Jacqueminot in all other respects.

If I were forced to make a small selection of pink or rose-colored roses I think I would choose La France, Paul Neyron, and Marquise de Castellane.

LA FRANCE

has become such an established favorite that it could not be left out—the garden would seem imperfect without it. It is large, a most constant bloomer, highly and sweetly scented, and of a beautiful clear color; and its form, although not so perfect and compact as most outdoor roses, I think could not be improved upon, being a sort of a regular irregularity (if I can use such an expression), thus in this matter filling a place entirely by itself. Its worst defect is that in hot and dry weather many of the buds fail to open. It is also rather tender for outdoor culture, but yet it can be very successfully grown by protecting the bushes somewhat in the winter.

As a rose for the conservatory I have found it to be almost unequalled.

PAUL NEYRON'S

one grand point is its great size. It is without doubt the largest rose that we can grow in this country. In form, fullness, fragrance, purity of color and hardness it is a fair medium. No collection, however small, should be without this great rose.

MARQUISE DE CASTELLANE,

the other rose mentioned, fills a place by itself. There is something cactus-like about the flowers, which is seen in no other rose. It is of a deep bright rose color, and the petals are clearly cut and somewhat pointed, and stand up stiffly like the petals of a cactus or water lily. It is unique and beautiful, and although scentless, is a particularly valuable rose. Francois Michelon I have found to be a very valuable rose, and although not filling a particular place, the same as the others named, is nearly as beautiful, and has a greater number of fairly good points than either of them. It is well worthy of a trial.

I have not found Baroness Rothschild as valuable a rose as it is generally represented to be. It seems to be unsuited to our climate. The flower (not the bush) is altogether too delicate for our harsh winds and scorching sun.

In white roses I have found

MADAM NOMAN

to be by far the best. It fact it is the only really *white* perpetual blooming outdoor rose that I have as yet found. It is, I believe, a hybrid noisette. The only defects it has are that it is rather a poor grower, and that it is somewhat tender, but in other respects it is perfection itself. It is of most perfect form, very full, and a most constant bloomer. With me it is *the par excellence* of white roses.

I would here like to warn all innocent would-be rosarians to be on their guard as to how much they should believe the descriptions given of (to them) untried roses. Here is an example, and, among others, one to which I fell a victim myself. This that I am about to quote, I have seen in many descriptive catalogues of roses:—"Perfection des Blanchés, *pure snowy* white, *free* bloomer, flowers *large* and *very* fragrant." Is there not in this description everything that is desirable in a rose (!) I had never met with this particular rose, and when I first read of it I sent for a couple of plants at once, and nursed and petted them for two years. They grew finely and at last I coaxed them into bloom, and I then found that the color was anything *but pure and snowy*, being really a sort of a combination of bad yellow and muddy pink. The flowers only opened at rare epochs (most of the buds never did open), and the flowers were no larger than dandelions and not nearly so well formed. As to being fragrant, I cannot tell much about it, as after I had once seen the flowers I was so disgusted that I didn't pry into things any further, but took it for granted this was as sell the same as some of the rest. This, however, *may* be a good rose in some other very remote part of the world, but it cannot be too severely sat upon here. I merely mention this circumstance, however, as a warning to others not to believe quite all they may see in print about roses.

The next best rose to Madam Noman that I have tried, and which is called white, is

ELIZA BOELLE.

It is somewhat similar to Madam Noman, but is not nearly so pure in color. I have not grown the white Baroness, but I have seen it. It is not quite white, and I think will not prove itself as valuable a rose as

Madam Noman, although it is a better grower. And now I must end this somewhat protracted paper by briefly mentioning that among the very dark roses the old Louis Van Houtte should still be accorded the very front place. It is certainly somewhat tender, and is scarcely as large as Jean Liabaud, another fine dark rose, but it is much purer in its coloring. I will, however, discuss the dark roses more fully another time.

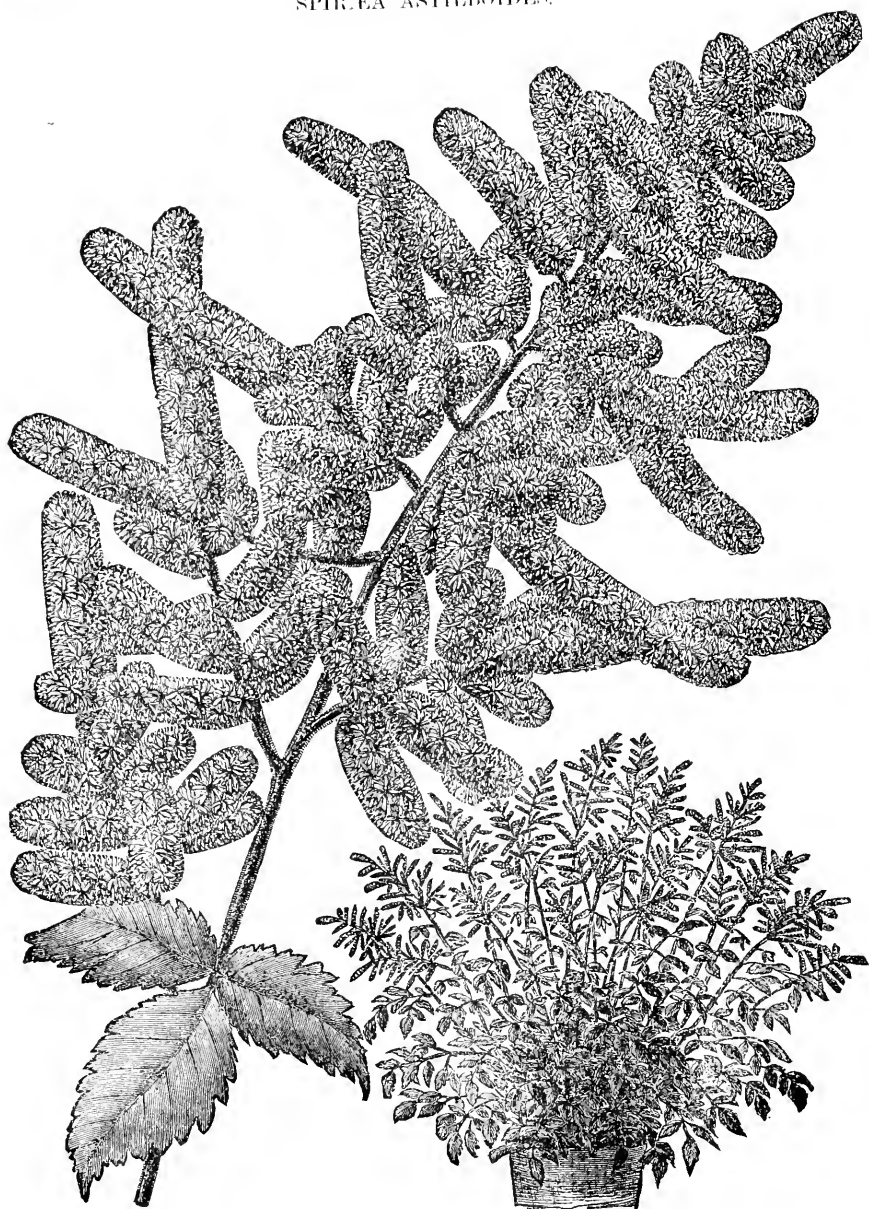
FREDERICK MITCHELL.

Inverkip, Feb. 23rd, 1885.

SPIRÆA ASTILBOIDES.

The genus *Spiræa* is an extensive one, and furnishes many species, both shrubby and herbaceous. Among the latter class are several which are almost indispensable to every collection of hardy plants for the herbaceous border. The above species is of recent introduction, and has the indorsement of the leading horticultural societies of the Old World. We have not seen it in flower, but from the illustration and the kindly mention of it by foreign journals, we are of the opinion that it is a decided acquisition. The *Garden* says of it: "So seldom does a *Spiræa* occur among the multitudinous new plants that appear every year, that this one is of special interest, especially as it belongs to the *Aruncus*, or Goat's Beard section, and is said to be hardy. At flowering time the branches are furnished with myriads of white blossoms in plummy clusters, as shown in the annexed illustration. It may be forced into flower as early as March; hence it is an invaluable plant for pot culture for conservatories. It has been introduced by Mr. Bull, of Chelsea (England), from whose new plant catalogue the accompanying wood-cut is taken. It has been certificated, both by the Royal

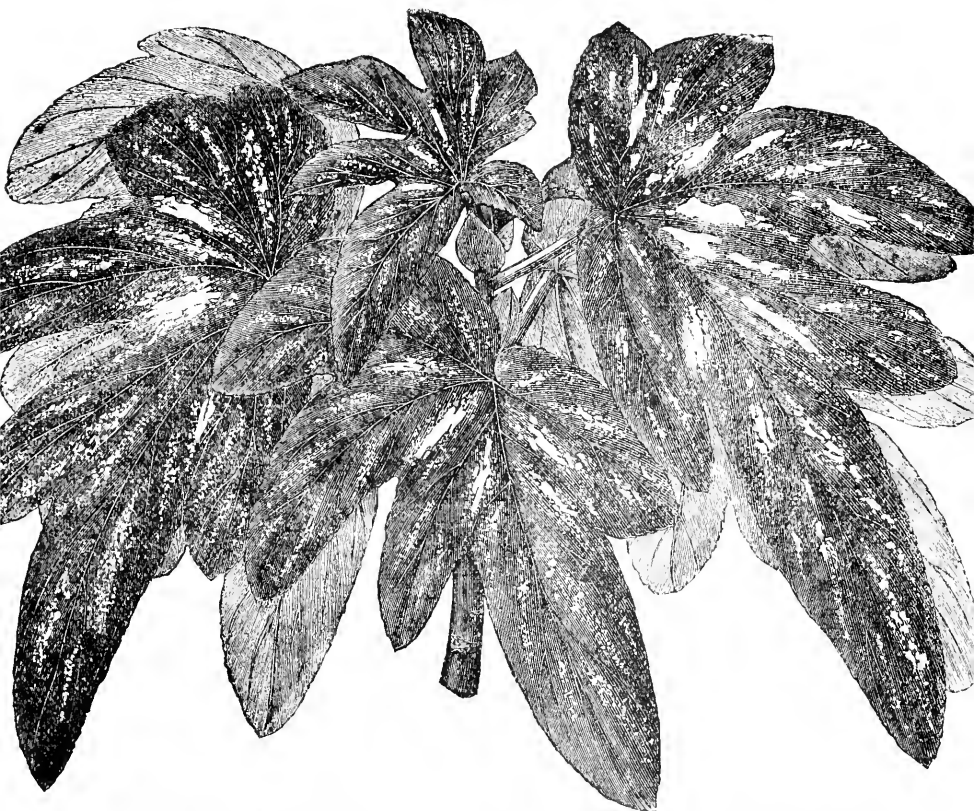
SPIRÆA ASTILBOIDES.



Horticultural and Royal Botanic Societies, and wherever it has been exhibited it has been much admired. It will

doubtless prove to be a plant of the easiest culture, both in pots and in the open ground."—*Ladies' Floral Cabinet*.

BEGONIA SCEPTRUM.



BEGONIA SCEPTRUM.

Among the new plants of recent introduction, we notice the *Begonia Sceptrum*, a very handsome and distinct species, a native of Brazil. Its leaves are obliquely ovate in outline, deeply lobed on one side, the lobes oblong obtuse, the veins sunk, and the raised spaces between marked with large silvery blotches, and numerous smaller dots of silvery gray. The leaf stalks are red, this color passing up the ribs of the under surface.

This species is a desirable addition to our list of ornamental plants for the conservatory. The popularity the tuberous-rooted species has justly at-

tained, has had a tendency to detract from the ornamental-leaved sorts, although they occupy entirely different grounds. We are quite apt to neglect the old in our chase for the new; this has been particularly so in regard to the *Begonia*. We now rarely see a good collection of the old Rex section, notwithstanding the plant possesses far more of interest than many of those now extensively cultivated for the sake of their flowers. There is, or at least should be, room for all, and we trust the *Begonia Sceptrum* will have a tendency to encourage the more general cultivation of all the species of this truly beautiful class of plants.—*Ladies' Floral Cabinet*.

MY TREASURES.

Homely and humble, these my cottage rooms ;
 No fine upholstery or gilded walls,
 No woven threads from Persia's costly looms,
 No fair, arched entrance into stately halls ;

No marble Clytie, with its frozen veins,
 All bloodless, wandering over snowy breast ;
 But, one sweet Cupid, touched with richer stains
 Of rosy life on lip and cheek and crest ;

With shining curls whose spirals catch the glow
 Of every sunbeam—this my kingly boy,
 And my one window, wisely made for show
 Of greenest foliage—these insure me joy.

And yet another—look the visia through—
 See yonder, with the red upon his cheek,
 And sleeping laughter in his eyes of blue,
 And strength that dreams no honest effort weak.

The sturdy keeper of this garnered bliss,
 Who lives for those he loves, who made this wild
 A garden spot, well paid by wifely kiss,
 Or the sweet chatter of a happy child.

He made my cottage window, framed in vines,
 Where gladness laughs in every lusty leaf,
 Where Fuchsias hang their bells, and Pansies shine
 Like violet eyes touched with some tender grief.

Here blooms the Rose, and there the spicy Pink,
 Here lifts the Calla, grand and pure and fair,
 And here sit I, to read or work or think,
 Or twine bright flowers in baby's golden hair.

Call me not poor, such treasure-trove is mine !
 With flowers and fruits in loving likeness blent ;
 My child, my husband and my household shrine,
 The wealth of boundless love and sweet content.

MARY A. DENISON.

Pick's Magazine, February.

CELERY.—The *R. N. Y.* has tried every kind of celery and it prefers for a late kind the Golden Heartwell. It is a half-dwarf, healthy and hardy. It is a good keeper and the quality is excellent. It gives more tender stalks to a plant than any other variety we know of.

MAD. SALLEROI GERANIUM.—This new geranium is a good addition to our variegated-leaved kinds. It was sent out by that fertile geranium raiser, Mons. Lemoine of France. It is a perfect gem for summer bedding, enduring well the bright sun, which cannot be said of any of the other silver-leaved sorts. Growing only about six inches high, and about the same across. As an edge plant, it should be used in the flower garden. Some of the dark, bright-colored leafed alternantheras will make suitable plants for contrasting with the variegated foliage of this gera-

nium. It has one advantage over all other beautiful-leaved geraniums, being easily propagated from cuttings.—*Country Gentleman.*

BEECH TREES AND BEECH-NUTS.—The Beech is one of the most valuable and celebrated trees indigenous to the Northern Hemisphere. It is true that the American Beech has not been so widely celebrated in story and song as its European namesake, still, it is in no way inferior, or less worthy of all the praise that has been bestowed in centuries past upon its near relative of the old world. Our American Beech (*Fagus ferruginea*), as found in nearly all of our Northern forests, is a noble tree with an exceedingly graceful habit ; for while the main branches are very strong and sturdy, they are always furnished with an abundance of small branchlets, that give to the tree a graceful outline, no matter how large or old the specimens may be. The bark of the tree is also somewhat peculiar, it being smooth, with no cracks, fissures, or corrugations, to hold dust or afford lodgement for mosses and lichens. The stem of a beech tree is a solid, firm and smooth column, almost as rigid as marble, and far more valuable than stone. This smoothness of bark extends to the minutest twigs, and even the buds in winter ; and the expanded leaves in summer are smooth and glossy. To call the beech a "clean tree" is but faint praise ; for, in addition to its neatness in appearance, it is peculiarly free from insect enemies and is seldom injured by these pests. Even the dead-trees are not very attractive to the wood destroyers of the insect kingdom. The beech is also a very hardy tree, thriving in very cold regions far to the northward, and its flexible and tough branches withstand high winds well, when planted in exposed situations. It will also thrive in very thin soils, rocky or otherwise, the roots keeping near the surface, and are so numerous that they will penetrate the smallest interstices among the rocks, and seek every spot where nutriment can be found. Any one who has had experience in clearing a beech forest will bear me out in saying that beech roots will fully occupy all the land within their reach.—A. S. FULLER in *American Agriculturist* for March.





THE NEW
EARLY WHITE GRAPE
"EMPIRE STATE"

The Empire State is a seedling of the Hartford Prolific, fertilized with the Clinton ; bunches large from six to ten inches long, shouldered; berry medium to large, roundish oval, color white with very light tinge of yellow, covered with a thick white bloom ; leaf thick, smooth underside ; flesh tender, juicy, rich, sweet and sprightly, with a slight trace of native aroma; ripening very early and continuing a long time in use; vine very hardy, vigorous and productive.

Grown from Nature

THE

Canadian Horticulturist.

VOL. VIII.]

MAY, 1885.

[No. 5.]

THE EMPIRE STATE GRAPE.

We are indebted to the Messrs. Pratt Bros. of Rochester, N. Y. for the handsome chromo of this new grape, which embellishes the present number of our magazine. They succeeded to the business of the late George A. Stone, and completed the engagement which he had made with Mr. James H. Ricketts, the originator, by paying him four thousand dollars in cash for the proprietorship of this new grape. This is the strongest possible evidence that they must have had very great confidence in its merits.

The originator states that it was raised from seed of the Hartford Prolific fertilized by the Clinton, so that it is a cross between two of the families of our native grapes. The vine first bore fruit in 1879, maturing a crop of thirty-eight bunches. As will be seen from the chromo, the bunch is large and handsomely shouldered, and the berries of full medium size, beautifully shaded with light yellow. He also states that the flesh is tender, juicy and sweet; yet sprightly, with a slight trace of native aroma. Never yet having had an opportunity of tasting this grape, we are obliged to give the opinions of others, and merely add that the quality given by Mr. Ricketts is fully borne out by

the statements of other gentlemen who have eaten the fruit.

One of the valuable characteristics of this grape is its keeping qualities. Although it ripens before the Concord, the Messrs. Pratt tell us that the fruit hung up in their office on the second of September, was in good condition on the first of December, seeming to improve in quality by being kept instead of deteriorating. In this respect it appears to have inherited one of the valuable peculiarities of its sire, which is one of our best grapes for winter use, growing richer and finer in quality by the lapse of time.

We are also assured that the vine is very vigorous, perfectly healthy, of good constitution, enduring the winter's cold of 30° below zero, having stood the test of the very severe winter just past, entirely unprotected, without the slightest injury, where the Catawba and other kinds have suffered severely; that it has thick leaves, which thus far have not been affected with mildew, and ripens up a heavy crop of fruit perfectly. Indeed, as much might be expected of it from its parentage. On the maternal side it belongs to the *Labrusca* family, which embraces most

of our hardy grapes, such as the Concord, and is found very generally distributed to the eastward of the Alleghanies; while the Riparia family, to which it is related on the paternal side, is found extending from the Province of Quebec to where the mercury freezes in the North-West.

Mr. J. B. Waldo, who has watched this grape for some time, on the grounds of Mr. Ricketts, before it was sold to the present proprietors, says that he has seen many clusters of it larger and finer than the one represented in our colored plate. Fruit picked on the second of September, 1884, was exhibited at the Ohio State Fair, and carried off the highest premium for the *best new seedling grape*.

We regret that we are unable to speak from personal observation of the qualities of this very handsome fruit and of the behavior of the vine, but from our acquaintance with the Messrs. Pratt, we have every confidence in their statements, and believe that they will be found to be fully substantiated by the grape in the hands of those purchasers who will give it proper treatment.

READ THIS

SPECIAL ANNOUNCEMENT.

To any one sending me *fifteen* NEW subscribers to the *Canadian Horticulturist*, I will send by express a MAGNIFICENT ART BOOK, entitled the FLOREAL KINGDOM. It describes more than 300 of our wild and cultivated plants, a full page being given to each plant; tells the common and scientific name, the natural order or family to

which it belongs, the language, &c. It contains over 200 illustrations, and 450 pages. This superb volume is 9 by 11 inches, and weighs nearly five pounds. It is splendidly bound, with full gilt and jet ornaments; is gilt edged, and will make a most beautiful and instructive parlor volume. Cash price, \$5. On receipt of either five dollars in cash or fifteen new subscribers and fifteen dollars, I will deliver it at the express office here to the address of any person ordering this beautiful book.

D. W. BEADLE, EDITOR.

EASY LESSONS IN BOTANY.

BY H. B. SPOTTON, BARRIE.

INTRODUCTORY.

The love of flowers is universal. To children especially flowers are a never-failing source of innocent pleasure. At this season, when winter is drawing to its close, there are few who do not look forward with delight to the spring ramble in search of the early Hepatica and Spring Beauty and Dog's-tooth Violet—those impatient and venturesome harbingers which follow so close upon the retreating footsteps of the frost-king. Even while the snow still lurks in hidden hollows, the pale Hepatica emerges from its woolly sheath and sweetens the air with its mild fragrance, and the Spring Beauty erects its cluster of purple bells to relieve the sober brown of the forest's leafy floor. And the interest attending the appearance of these first-comers is not diminished, but rather increased, as spring ripens into summer, and the wealth of our meadows and woods and water-margins is put forth in unceasing variety of odor and color and form.

This universal love of flowers is in itself a desirable thing—a thing to be encouraged for the sake of the refining influence insensibly exerted by it.

Hence, even though not intended to be systematically studied, flowers should form a prominent feature in the surroundings of all our schools. But this interest in color and form—this instinctive love of what is beautiful in nature—is deepened into admiration for nature's ways of working, when we look more closely into the structure and uses of the various parts of plants, and see how wonderfully these parts are adapted for the special purposes they have to fulfil in the plant's life-history.

In this closer examination, also, the truth is gradually borne in upon us that the floral world around us, peopled though it is with forms almost endless in variety, is nevertheless not a chaos, but a well-ordered system, and we come to recognize family likenesses between plants which to the untrained eye do not at first resemble each other in any respect. To the ordinary observer, for instance, there is nothing in common between the locust tree and the clover growing about its base: yet a very moderate botanical training enables one to see that the flowers of these two plants are constructed on precisely the same plan, that a similar plan is manifested in the structure of their leaves, and that even the mode of growth of the stem is the same in both. If our botanical studies are conducted in a proper way, we are led to find out all such facts, and many others, for ourselves by the use of our own eyes; our powers of observation are trained and strengthened, and we are irresistibly led to the exercise of our reasoning faculties in drawing inferences of various kinds from the facts which we observe. *We are taught to think for ourselves.* And no study accomplishes this high aim more effectually than botany, when rightly pursued.

In the following papers it will be the aim of the writer to present only such

botanical facts as can be readily observed and comprehended by even very young readers. We shall, from the very outset, study plants themselves, and the writer will be much disappointed if those who attentively follow the lessons do not shortly find themselves qualified to go into the fields and woods and with little difficulty determine the proper name and relationship of any of our common plants. To be sure this is not the highest aim of botany, but the consciousness of the power to do even this is a great source of pleasure to the young; it leads to pleasant summer outings in search of new plants, and to the formation of collections, in which much innocent pride may be taken, and in the making of which habits of neatness and carefulness are necessarily cultivated.

LESSON I.

As it is the design of these lessons that you shall learn the simpler facts of botany by actually handling plants themselves, and seeing with your own eyes all those things to which your attention will be drawn, the first thing you must do, always, is to get the plants or parts of plants that will be mentioned at the beginning of each lesson. Sometimes these specimen plants will be wild ones, so that you must go into the fields or woods to get them; but we shall also, when it suits our purpose, take plants from the garden, or weeds which grow by our roadsides and near all our houses. So that, generally, you will not have much, if any, trouble in finding everything you want.

Now, for the first lesson we shall examine roughly the whole of two or three plants, so as to get a general idea of all the parts which go to make up their structure. After that we shall spend some time upon each of the parts separately, comparing together the same

parts of different plants, observing any differences of plan that may strike us, and giving, for convenience in speaking about them, special names to special forms. Then, as our observations go on, you will easily discover for yourself that while plants vary so much in one way or another that hardly any two are just alike, still there are a good many points in which even the most unlike plants resemble each other, and that by noticing these points of resemblance we can readily parcel out the plants that grow all about us into groups, and these again into smaller groups, giving them all appropriate names, and, in short, making for ourselves a classification or orderly arrangement of them. If you have commenced the study of English grammar you know that one of the first things you have to do is to observe the peculiar uses of the different kinds of words, and having learned the uses of them to give them special names, so that you discover in time that every word in the language must be classified under some one of the eight parts of speech. Then you find that while all the words in a certain group are equally entitled to be called *nouns*, we will say, yet the large group of nouns may be broken up into smaller groups which we call *common nouns*, *proper nouns*, &c. In short you learn to make a classification of words, and you do not require to be told what an advantage it is to have a clear understanding of this classification. Just so in the study we are now beginning. You will learn how to classify plants, and this we hope you will do by so using your own eyes as to read in the plants themselves the reasons for their position in the system.

For our first examination it makes but little difference what plants we take, but let us choose two or three which will be within everybody's reach, particularly at the commencement of

our Canadian summer. Obtain, then, a specimen of each of the following, *in flower*:—Hepatica, Dandelion, Geranium, Wallflower, Buttercup. The last-named is the best one to begin with, for a reason which will appear presently. In Canada there are a good many kinds of Buttercups, but any one of them will do just now. You will be pretty sure to find one of some sort in the first wet ditch or meadow that you visit. The Hepatica will be in bloom in April and May in every piece of dry woods. You will observe that the flowers appear before the leaves of the season, so that you must gather a few of the old leaves when taking up the plant. The Dandelion is only too common, and the Geranium and Wallflower are to be found in every collection of house-plants. You should be careful, when gathering the out-door specimens, to take up the root as completely as possible. Having shaken off the adhering earth, or, better still, having gently washed it away by dipping the roots in water, we are ready to begin. Look first at the root of the Buttercup. Observe its thread-like or *fibrous* form, and contrast it with the single stout *tap-root* of the Dandelion. (How does it compare with the Hepatica?) Observe the much finer threads that strike out from the surface of all the roots; we shall call these *rootlets*. You see that the color of the roots is not green like the upper part of the plant, but generally pale or brownish; and above all satisfy yourself that there are no *buds* or leaves, or anything like them, on the roots. If you ever find an underground part which seems to have leaves or buds, you may be perfectly sure it is not a root. The Canada Thistle, the Couch-Grass or Quick-Grass, and the Potato all have such underground parts. The root of our plant has a special duty of its own to perform; what that is, and

how it is done, we shall find out later on. In the meantime we shall just mention that every part which performs a special duty is called an *organ*, and from this out we shall often use this word in this sense.

Now look at the stem of the Buttercup. Squeeze it between your finger and thumb, and observe how readily it yields to the pressure. Try the Wallflower and Geranium stems in the same way. They are harder, especially the lower part of each. The soft stem is *herbaceous*, the hard ones *woody*. In these three plants the chief use of the stem seems to be to produce and carry the leaves and flowers. It has other uses, to be described hereafter, but for the present you must know that *leaves are produced on stems and branches*. Now look at the Dandelion. Find the stem. You will probably say it has none. But it has leaves, and these must grow on a stem. The leaves of Dandelion are all crowded together, forming a mat or rosette at the surface of the ground, and the stem must therefore be very short indeed. Such plants as this are, in fact, often called *stemless*. Now compare the Dandelion with the Hepatica. The knowledge you have gained from the Dandelion is of great use to you here. You at once pronounce the Hepatica to be *stemless* also, the spaces of the stem between the leaves being reduced almost to nothing.

The leaves themselves next call for examination. Beginning with the Buttercup, we see that the lower leaves are somewhat different from the upper ones. Each of them has a stalk and a spreading flat part, the latter more or less cut up into sections. The upper leaves of all have no stalk. We shall call the stalk of a leaf its *petiole*, and the flat part its *blade*. All the leaves of the Hepatica have blades and petioles. Those of Dandelion and Wallflower

simply have their blades narrowed considerably as they approach their insertion on the stem, but can hardly be said to have true petioles. All the Geranium leaves have blades and petioles. Do you see anything else about the Geranium leaves? Of course you notice the two little leaf-like things at the lower end of the petiole, one on each side. These belong to the leaves, and are called *stipules*. Do you find anything like them on the other plants? Always keep a look-out for stipules when inspecting leaves.

Just one other matter and we shall pass on to the flowers. Hold up a leaf of each plant between you and the light, and notice the network of veins running in all directions through the blade. Of course the leaves are very different in shape, those of Hepatica and Geranium being a little alike, and also those of Wallflower and Dandelion, but in the network of veins they show a similar plan. Now all leaves of this sort are said to be *net-veined*, in contrast, for instance, to a leaf of Indian Corn, which is *straight-veined*.

FRUITS IN NEBRASKA.

The Nebraska State Horticultural Society recommends for general cultivation in that State many of our popular varieties, such as Astrachan, Duchess, Snow, Wealthy, Pewankee, Grimes Golden, Ben Davis, Northern Spy, Walbridge, Mann and Whitney, among apples; Alexander, Amsden, Crawford's Early, Crawford's Late, Smock, and Old Mixon, among Peaches; and of grapes the Concord, Delaware, Moore's Early, Worden, Salem, Pocklington and Eumelan. Planting of pears for profit is not recommended, as the trees have almost universally blighted. The safest are thought to be Flemish Beauty, Louise Bonne, Vicar, Lawrence, Clapp's Favorite, Bartlett

and Kiefer. Only Morello Cherries are recommended, and Plums of the Miner type.

THE MIDSUMMER MEETING

Of the Fruit Growers' Association of Ontario will be held in the Town of Uxbridge on Wednesday and Thursday, the 24th and 25th of June, 1885. The Mansion House, Plank House, Revere House and Bascom House will entertain members at one dollar a day. The usual arrangement will be made with Railways for reduced fare. Members are requested to send to the Secretary at St. Catharines a memorandum of such questions as they desire to have discussed.

APPLES IN ENGLAND

On the 3rd of March No. 1 Baldwins brought from 15s. 6d. to 18s. 6d. per brl.; No. 1 Russets, from 15s. to 20s.; No. 1 Vandevere, from 12s. to 18s. 6d.

On the 7th March, Canadian Baldwins sold at 15s. to 18s.; Spy at 13s. to 16s.; Golden Russet (Canadian) at 14s. to 22s.; Rox Russets at 9s. to 13s.; Greenings at 10s. to 14s.; Canada Red at 17s. to 18s. per brl.

On the 14th March, Green & Whinney, Liverpool, report Canadian Baldwins at 16s. to 18s.; Golden Russets at 16s. to 24s.; Rox Russets, 10s. to 14s.; and Greenings, 12s. to 16s. Arrivals for the week, 14,396 brls. Total to date, 483,939 brls.

On 28th March, Green & Whinney, Liverpool, report Canadian Baldwins 17s. to 19s., and Golden Russets 20s. to 26s. Arrivals for the week, 11,555 brls.

Keeling & Hunt, London, report Nova Scotian Rox Russets from 15s. 6d. to 26s., and Baldwins from 13s. 6d. to 14s.

THE ONTARIO APPLE AND McINTOSH RED.

At the winter meeting of the Maine State Pomological Society held in Gardiner, Maine, Feb., 23rd 1885, Mr. Geo. B. Sawyer, the Secretary of the Society, exhibited some samples of the Ontario apple, raised from scions sent for trial by the Fruit Growers' Association of Ontario. The fruit was thought to be crisp and juicy, but too sharply tart to be popular as a dessert fruit.

We notice that one gentleman reports that the McIntosh Red is proving a prolific bearer, judging from but a limited experience however, but not a late keeper.

QUESTION DRAWER.

DEAR SIR,—I have in my dining-room a glass fernery, with close fitting top of same; but have not been successful in the cultivation of native roots planted last fall. Will you kindly tell me through the columns of your magazine—

1. Whether the top should be left on continually, or removed at intervals?

2. Whether it is necessary to have a faucet for drainage, or if a layer of charcoal in the bottom of tray will answer the purpose?

3. Also, how often the plants require water?

Your reply will much oblige

Yours respectfully,

MRS. W. D. WATSON.

AYR, Ont., March 13.

REPLY.—You will do well to raise the glass, so as to admit air occasionally.

2. A faucet is not necessary, if you do not water so very abundantly as to cause a quantity to remain stagnant.

3. Be careful not to give too much water. Your glass covering prevents rapid evaporation. Use your own good common sense, and water when the soil seems to be getting dry. Let it be moist only, not wet or sodden. No set time for watering can be given.

WHAT THE PEOPLE SAY.

We have just closed the Annual Meeting of our Fruit Growers' Association. Had a very successful fruit convention in connection with it. I am much pleased with the *Canadian Horticulturist*. It certainly meets a pressing want as fruit growers need definite information, not hap-hazard conjecture. Your fellow worker,

J. R. HART.

Bridgetown, Nova Scotia.

We take eleven papers and there is not one that I welcome with so much pleasure as the *Canadian Horticulturist*.

VALENTINE DYNES.

Relessy, Ont.

CORRESPONDENCE.

TOMATOES.

DEAR SIR,—For the last two years I have tried the experiment of training Tomatoes on the trellis system, and have found it to answer admirably, at least on a small scale. I have a woodshed which faces south-east, and has just frontage enough to allow me to plant five good strong plants two feet apart. These cover the unsightliness of the shed, and give my family as many Tomatoes as they can eat in the ripe, uncooked state, and as many as they require for sweet pickles, &c. I planted the "General Grant," which bore and ripened, from the bottom to the top, and which grew to the height

of eleven feet six inches. I set the plants fifteen inches from the bottom of the shed, which gave them a good slope. I use good strong uprights, and put the cross-pieces a foot above each other. Trim out weak shoots and tie up strong ones.

R. C.

GROWING STRAWBERRIES FOR PROFIT.

To make strawberries give the greatest net returns, there are many things to be taken into consideration. You must get the greatest number of quarts of good fruit, with the least possible outlay in labor, manure, etc.

The plan I have adopted, and which I believe to be the best for those who have land enough to do so, is to plant out a new plantation every spring, as it takes much less labor to plant out and care for a new plantation than to clean out the old one; and you always get the best fruit from a new plantation.

The soil should be prepared the season before you want to plant, either by summer-fallowing or ploughing under a good crop of clover and thoroughly working; and for a clay loam, which is best, if not already under-drained, by all means have it under-drained before planting; plough up the last time in fall, before the land gets very wet. If your soil is a dry, sandy loam, it may be ploughed in spring; but if clay loam, it should not, as it will dry out more easily, and will not work up so fine and mellow. In early spring, soon as the land will work up fine and mellow, cultivate deep with a two-horse cultivator, harrow down level and fine, then mark off with corn marker in rows four feet apart, and plant from one to one and one-half feet apart in the row.

The greatest care should be taken not to let the plants dry any while planting; do not take too many at once in your pail: sprinkle a little fine earth

over them to prevent drying, then take out but one plant at a time, make the hole deep enough with trowel or dibble to allow the roots to go straight down, spread them out fan-shaped, and press the soil among the roots very firm, so that by giving a quick jerk on a leaf it will break off before moving the plant; do not cover the crown of the plant or they will die. With a little practice the work can be done very rapidly.

Plant about six to eight varieties, as you can thus have the crop to extend over a much longer season, and the more you lengthen it at either end the greater will be your returns, as the earliest and latest fruit always bring the best prices.

I plant none extensively except varieties that do well in the matted row system. I also prefer those that bloom rather late in the spring. There is also a great difference in varieties withstanding frost while yet in bud.

I made a thorough examination of the blossoms and buds last spring, after the frost of May 29th (we had four degrees of frost.) On referring to notes taken at that time, I find that Jersey Queen had not yet opened any bloom, but more than one-half of the buds were killed. Primo and Mrs. Garfield were just beginning to open with a very large percentage of the unopened buds killed, while Daniel Boone, James Vick and Manchester, growing by the side of them were uninjured. Crescent Seedling and Captain Jack are also safe ones to plant.

Pistillate varieties usually produce the largest crops, but should have every fifth or sixth row planted with a perfect flowering sort.

I find none better to fertilize the Crescent than Wilson: it begins to bloom several days earlier than Crescent, although it does not ripen its fruit so early.

Some people claim that the variety used to fertilize with has a great influence on size, form, and quality of the fruit thus fertilized! I have had Crescent fertilized with Wilson, Captain Jack, Kentucky, Sharpless, New Dominion, Duncan, Cumberland Triumph, James Vick, Warren, and many others on different soils, and have watched them very closely for several years, and find that wherever I plant Crescent I always get Crescent fruit, no matter what they have been fertilized with. The seasons, wet and dry; soils, manner of cultivation, etc., have a great influence on size, quality and firmness of the fruit. I have also tested many other pistillate varieties on a more limited scale and find the above to hold good with all of them.

The best varieties for both sand and clay loam, so far as I have tested them, are Crescent Seedling, Daniel Boone, Manchester, James Vick, and Wilson, with Captain Jack and Mt. Vernon added for clay loam. Early Canada is very profitable when it escapes the spring frost: it blooms first of any, hence more apt to be injured, but is healthy, hardy, and productive, and is the earliest of all; requires strong soil.

I always make the most out of late sorts by planting such kinds as Manchester, Captain Jack, Mt. Vernon, and James Vick on a moist clay loam, and mulch well with straw. The most of the crop comes into market when prices begin to come up and good fruit getting scarce, hence have no trouble finding good markets.

Cornelia is a new variety that gives promise of being one of the most profitable late market sorts, but has not been sufficiently tested to be sure that it is such.

W. W. HILBORN.

Arkona, March 7th, 1885.

MEETING OF WINONA AND STONEY CREEK GRAPE GROWERS' CLUB.

(From Our Own Correspondent.)

Another meeting of the above Club was held in the Literary Hall, March 13th, attendance over one hundred, chiefly large fruit growers. Meeting was called to order at 10 o'clock a. m., and the ball opened by a paper on "Plum Culture," by G. W. Cline, of Winona. Mr. Cline has had fine crops of plums every year, and attributes his success to jarring the trees and spraying them with Paris green. Having adopted both of these methods to destroy the curculio, Mr. Cline feels confident that spraying will destroy the little Turk; sprays the trees just as the blossoms are falling, and again in a week or ten days, then a third time after a similar interval. Had found Wild Goose and Weaver varieties worthless. Would recommend the following varieties in order of ripening:—Imperial Gage, Bradshaw, Lombard, Columbia, Pond's Seedling, German Prune and French Prune. After considerable discussion, the next subject, "The Collection and Management of Fruit for Exhibition," was introduced by Murray Pettit. Many members expressed their disapproval of the exhibition of fruit by private parties who did not grow it—who perhaps grew none of it—but procured it from their neighbors. The meeting adjourned at 12.30 to partake of lunch furnished by the Society, and served up by willing hands. After the wants of the inner man were satisfied, the Secretary read a letter from the Niagara Grape Co. stating that Mr. E. Ashley Smith would not be able to attend, and read a paper on "Grapes," as he had not yet returned from New Orleans. In his absence the subject was introduced by Mr. J. H. Biggar, the veteran grape grower of Winona. Mr. Biggar

thought no other grape could compare with the Niagara in the qualities that go to make up a perfect grape. He thought that Niagaras would pay better than Concordes at the same price, being heavier yielders. E. D. Smith thought if white grapes were as plentiful as black they would not sell as well. Mr. Seusse did not believe in the Kniffen system. Had pruned on many different systems in Switzerland, on the Lake Erie Islands and here, and had found best results invariably from a system of pruning that kept the bearing wood close to ground and frequently renewed. This is impracticable in the Kniffen system. Mr. Murray Pettit, whose large experience makes him considered an authority upon grapes in this district, would recommend the following varieties for profit:—Delaware, Concord, Niagara, Champion, Moore's Early, Worden, Rogers' 4, 9, 15 and 44, Salem, Duchess and Noah. Mr. Woolverton had Pocklingtons that produced double of any other variety of same age, and sold for 20 cents per pound. R. R. Smith thought Mr. Pettit's list good, but would shorten it by striking out Rogers' 4, Salem, Noah and Duchess, also Champion except on early ground. Mr. Sperr had good success with Pocklington and Diana. A discussion followed on the damage done to fruit growers by honey bees and robins, which resulted in the adoption of the following resolution:— "That in the opinion of this meeting it is advisable that every grower of cherries, berries and grapes shall kill all robins and destroy all nests and eggs possible from their first appearance in the spring until the grape crop is gathered, at the same time sincerely regretting that the old friend of our early youth has become one of our most formidable enemies." The danger of overstocking the grape market was argued in the affirmative by Wm. Orr.

E. D. Smith and Murray Pettit ; and in the negative by Mr. Montgomery, Mr. Morden, Mr. Wilson and others. A long and animated discussion on the probable effect upon grape culture if the Scott Act is generally adopted next ensued, but no conclusion was arrived at ; in fact most of the speakers argued a different question, namely, Is wine-drinking productive of temperance or intemperance ? one party contending that in countries where wine is a common beverage no drunkards are seen, and the others contending that it is simply putting the alcohol in a more seductive form to conceal it in the wine glass.

Mr. A. M. Smith's paper on "Small Fruits," a synopsis of which appeared in the March number of the *Horticulturist*, was next read by the Secretary. Mr. Morden, of Drummondville, then addressed the meeting on the small fruit question. Mr. Morden evidently understands small fruit growing, and can also tell his hearers in a very clear and practical way how it is done successfully. Mr. Morden would approve of Mr. Smith's list of black caps, but would only recommend one red raspberry, and that the Cuthbert. Also thinks the Wilson strawberry most profitable for general culture. Where Kittatiny blackberries are too tender would grow Taylor's Prolific. Had found Raby Castle the best red currant. Black raspberries and blackberries should be watched in June for rust, and any affected plants dug out and burned at once. The larva of the raspberry saw-fly should also be watched and treated to a shower bath of hellibore or Paris green in solution.

A vote of thanks was tendered Mr. Morden, of Drummondville, and Mr. A. M. Smith, of St. Catharines. This is a brief outline of the most important and interesting meeting of fruit growers ever held in Saltfleet.

STOCKS FOR FRUIT TREES.

There is wide scope for the consideration of stocks for our fruits. The influence is great in many ways, and is not well understood by fruit growers themselves—and it concerns them the most. Fruit growing cannot be learned in half a dozen years, and the idea entertained at the end of that time may be reversed at the termination of the next six years. Then the opinions of the old and experienced in such matters are those to be depended on, for experiments with fruit trees cannot be proved in a short time to give a correct opinion ; but I cannot see in any way that trees are made harder by any particular stock. It only enables us to adapt our choice fruit trees to various kinds of soils, or to dwarf or bring into early bearing, as we grow the pear on the quince to dwarf and bring it into early bearing. But the quince will not do well on all soils—not on a dry sandy one. The quince is raised by cuttings for this purpose. More long-lived standard pears are wanted, the pear stock is the one, and best raised from seed ; and also for the standard orchard apples, apple stocks. Then there is a marked difference in the seedling stocks—some robust, others of weakly growth—all having some influence on the graft. Pears can be grown on other stocks, as thorns and the mountain ash. The mountain ash may overcome the difficulty of growing pears on damp wet soils ; what influence it may have on the fruit I cannot say. Some pears will not grow on any foreign stock, not even the quince. In that case, where it is desirable, resort must be had to double grafting. The varieties most likely to do on those foreign stocks are Maria Louise, Passe Colmar and Josephine de Malines. Plums can be grafted on cherries, and *vice versa*—even the wild native cherry that grows all over the Province ; but

here it is too far north to be very successful with plums and cherries. Those in the warmer parts may benefit by it, and I believe the peach would do well on it. Let those in more favorable parts of the Province try it and give their reports in this journal.

Medora, Muskoka.

T. A. H.

REPORT ON PLANTS RECEIVED.

I feel sure that your patience has been well tried and must be nearly exhausted with the way in which members of the Association have withheld the information they are expected to give respecting the reports of the plants, shrubs, trees, bushes, vines, &c., which they received from the Association. It may be some have not sent one line to let you know how they have done. We understand that each one shall report on the success or otherwise, as the case may be, to the Secretary of the Association for the information of the Society and the country at large. We read these reports with great interest, and expect that others do the same. It is of importance to the fruit growers to know how they succeed in the various parts of the Province. We are in hope that the time is not far distant when you will be well rewarded for your patience. We say that the F. G. Association of Ontario is doing a noble work for the future as well as the present. The past of the Society has been comparatively small to what it must be in the future. There are many who do not understand the value or appreciate the information which they should receive and would receive were they to unite their efforts in so noble and philanthropic an undertaking as spreading abroad useful information for the present and future generations throughout the length and breadth of our beautiful Province, as well as the world at large. I hope that some one favor-

able may be induced to throw in their mite and help forward so good a work.

I wrote you several years ago giving you a brief account of some of the trees and vines received from the Association. I now give you a brief account from the beginning, as I do not know where I reported to:—

I became a member of the Association in

1872—Received the Report.

1873—Received Grimes' Golden Pippin, which was late in coming, and about or quite dead.

1874—Received Downing's Gooseberry and the Salem Grape, which have done fairly well, the first mentioned bearing some good gooseberries. The grapes were slow in bearing, but now we have some very fair grapes. We do not think it needful to describe the fruit, as it is well known.

1875 — Received Flemish Beauty Pear. It has borne some nice pears. The tree is thrifty and doing well; very hardy; moderately productive.

1876—Received the Glass Seedling Plum. The tree has done well; began to bear in three years after planting out; have propagated by grafting; plums sell well in market; fruit large, medium in quality, good for market.

1877—Received Saunders' Hybrid Raspberry. Killed the next winter with frost.

1878 — Received Burnet Grape. Came in good order; is now bearing; the fruit was small at first, but is doing better now; rather late in ripening; think it will do better after a time when it gets a stronger vine.

1879—Received the Ontario Apple tree from Mr. Charles Arnold, of Paris. The tree was injured in carriage; think it had been frozen; cut it well back; grafted the cuttings; one grew and is now bearing some good fruit—a handsome striped apple, good size, large to medium; good winter apple for market.

1880—Received the Hybrid Raspberry Black Cap (Saunders'). It has done well, bearing some fine crops of large berries; productive.

1881—Received the Brighton Grape in good condition; rather slow in growing; commenced to bear this last summer; bunches small, fruit sweet; rather late in ripening.

1882—Moore's Early received in good order; grows slow; not fruited yet.

1883—Received the Worden Grape; was killed with the frost. The Jessica, received at the same time, stood the frost much better than the Worden; last summer the Jessica made a very fair growth; I think it will stand better another year.

1884—Received Prentiss Grape in good condition; made a medium length of vine; think it will do well.

Yours truly,

CHARLES HICKLING.

Barrie, March, 1885.

METHODS OF STRAWBERRY CULTURE.

BY T. C. ROBINSON, OWEN SOUND.
(For the Canadian Horticulturist.)

There are two "systems" in common practice of growing this delicious small fruit. The "*Matted Row*" is the one by which most strawberries are grown that are offered for sale in the fruit stores of our cities and towns. The plants are set out about a foot apart in rows three to four feet apart and allowed to make runners freely the first year; the second year the old and young plants fruit promiscuously, and all are ploughed down after the crop is gathered—or, perhaps, if weeds are not too numerous and strong, the plantation is allowed to remain a year longer to bear a second crop. The advantages of this plan are easily seen and easily obtained—almost no care is needed after planting, except to keep the cultivator

running (always in the same direction, so as to throw the runners all the same way) in the fast-narrowing spaces between the rows: the young plants with interlacing roots protect one another on most soils from heaving in winter; and if the white grub attacks the roots its ravages are not much noticed among so many plants.

Certain modifications of the Matted Row are practised by more careful growers. One man keeps the first runners off the young plants, thereby inducing stronger after-runners, and more of them. Another observant horticulturist sets the plants with the main *old* runner of each pointing towards the same side in order that the new runners to form plants may all start out on the other side of the row—it being the fact that young plants always send out runners in the opposite direction from the parent plant. A third grower carefully "layers" the first runners at uniform distances to keep his beds from becoming crowded in spots. But the one feature of letting the runners grow and form more plants is characteristic of this system however modified.

But the disadvantages are equally marked—the plants, crowded together, as they are sure to be on good soil in a fair season, demand far more moisture for proper growth of foliage and development of fruit than is contained by any soil in an ordinary season; then the rows invariably contain a large number of plants formed too late in the fall to form fruit buds—and therefore unproductive, and as useless as weeds; lastly, the ever-watchful weed-pests soon find safe refuge among the rooting runner tips out of reach of the cultivator, so that unless the soil is very "clean" each row becomes about berry time a regular Weeds' Paradise, which no large grower can afford to greatly meddle with. The net result of these three drawbacks is found in a crop

which ripens up all within a few days, and consists at the last of an immense number of berries prematurely ripened and exceedingly small from lack of moisture; hence the market is suddenly glutted, and the price reduced for good fruit, and the later run of small berries rendered almost unsalable at any price.

"*The Hill System*" is almost unknown in some localities, though practised in other places for a long time. According to it the plants are set from a foot to 18 inches distant, in rows two to three feet apart, and all runners cut off before they take root and the whole surface mulched; no "hilling-up," please—the only "Hill" is a hill of growing leaves and fruit. The three drawbacks to this system are strongly insisted on by large planters:—

1st. So much trouble to keep runners off.

2nd. Danger from plants heaving out in winter.

3rd. White grub, if present, makes such noticeable blanks in the rows.

The advantages, however, are claimed, by all who appear to have fairly tried both plans, to greatly counterbalance the drawbacks. They are:—

1st. Large berries.

2nd. Large crop.

3rd. Long season of ripening.

4th. Certainty of crop in dry seasons.

5th. Twice as many paying crops of fruit from the same plantation—the net result claimed being a much larger margin of profit than by the other system.

Naturally the advantages and drawbacks in each system vary relatively on different soils, with different varieties, and especially in different seasons.

On light sandy soils, where weeds sprout and runners root with great facility, and where drouth soonest shows itself, the evils of the Matted Row, and the advantages of the Hill system are relatively greatest. On my land of this

nature I find, with lurking wire-grass and sprouting thistle-roots, I can only hope for about a fourth to a third as much crop in the Matted Row as what I may confidently count on if the runners are kept off. We cut them off with a well-sharpened Dutch or "push" hoe, which we also use to cut the weeds close around the plants, and we think the increase in crop pays us five times over for the increase in labor and for the mulching. But on heavier soils, where weeds and runners do not root so readily, where moisture is more abundant, and where single plants that happen to lack mulching are certain to be heaved out to their destruction, the "Matted Row" will not be left so far behind.

With some varieties only the "Hill System" will succeed at all. The Sharpless, for instance, *may* be profitable with some men in "Matted Rows," but I would like to see the men, and the rows too! So also the Jersey Queen, and indeed most of the large varieties must have the runners kept off to yield a profit. But Manchester, Crescent, the brave old Wilson, and a few others, are so persistent that they will not refuse a lot of berries, in spite of grass and weeds, in worse than "Matted Rows." In very moist seasons the Common System may seem fully as profitable as the plan of keeping runners off. But when the rainfall corks up a week or two before the berries color, and *holds up* till the crop is done, then the difference is felt with a vengeance. Then the price running up and the berries running down make a vexatious fix for the man of "Matted Rows"—vexation not lessened by the quickness to run out of even his little berries. Last summer made a case in point: how many growers would have exchanged their matted rows for my Bidwell hills, yielding over two hundred bushels per acre—on light land, in a four weeks' drouth—

with the price fifty per cent. over ordinary figures, and buyers anxious?

But this question is one not lightly to be settled in one article or by one man. My experience warrants me in claiming the "Hill System" the best for all ordinary soils and varieties. Now let the gentlemen of "Matted Row" leanings speak up for their system that *Horticulturist* readers may come to an intelligent conclusion before the planting season is upon us.

CULTIVATION OF GRAPES.

As location, aspect and soil are of the first importance, and as they are questions that stand foremost on the intending planter's mind, demanding solution, I will endeavor to put a few stray thoughts together bearing upon the above important subject, hoping that they may prove a benefit to some. Nearly any soil will grow grapes, at least for home consumption, and some varieties are so thrifty, and have such a strong constitution, that they can be grown almost anywhere, but with grapes on a large scale, either for market or wine, or both, good and paying results can only be reached in the best locations. (And I would say right here that I do not approve of the manufacture of grapes, or anything else into fermented wine, to be used as a beverage, as it is one of the branches and a feeder of one of the greatest evils in Christendom, intemperance.) The most suitable location for a vineyard in this beautiful northern land of ours is a situation near some of the larger lakes, and elevated at least 40 or 50 feet above them, or smaller bodies of water, for if near the level of bodies of water, especially small bodies in this latitude the situation will very likely be subject to early and late frosts. Large bodies of water are not so injurious as small, as they absorb heat in great quantities

during the summer and give it off slowly in the fall; this affects the surrounding country very materially by preventing early frosts. In the spring, the water being cold, it keeps the atmosphere cool for a considerable distance from the shore, and consequently prevents vegetation starting so early as it otherwise would. My vineyard is located about four miles north of Lake Ontario, and fully 500 feet above it, at Baltimore, on the south-eastern slope of Elcho Height; it is more exempt from early frosts than some other parts of the province thought to be more highly favoured by nature. The very destructive frost that visited the larger portion of this continent on the 10th of last September, left the tenderest vegetables here almost uninjured, a part of my Concord, Delaware, Brighton, and all of Lindley, Hartford, Champion, Creveling, and other early ripening varieties matured before the heavy frosts injured them. I would not recommend the planting of any variety, in this district, ripening much later than Concord. In selecting a situation for a vineyard all the surroundings should be closely observed and taken into account. If the land has no protection from the north and north-west see what the facilities are for supplying one by a belt of trees; Norway spruce is the best. Would recommend the declivities of hills and mountains inclining to the south as the best exposure for a vineyard; and the next in order are the south-east, east, south-west by south, but never a north or a full western exposure. Virgil said, "nor let thy vineyard bend towards the sun when setting," and these words are as applicable now as they were thousands of years ago. A location protected from the cold north winds, so as to insure sufficient heat to mature the fruit, is also desirable in a cold climate, but in a hot one the heat may be so great as to exhaust the

strength of the vine by too rapid evaporation from its leaves, and it generally fails to live. A full southern exposure is no doubt to be preferred in Canada, and if the land descends to the south so much the better; but if very steep will cost more to prepare and keep in order; the land will also wash badly. A deep sandy loam with porous subsoil, thickly interveined with small debris of limestone, is preferable to clay or muck. Although a sandy soil may not naturally produce the most luxuriant growth, it is certain that it produces fruit of the richest quality. Such soils are moderately favorable to the growth of the vine, are easily worked, and do not retain an excess of moisture as they are thoroughly underdrained by nature. And it is a point that always ought to be borne in mind that the vine, like humanity, thrives very poorly with wet feet. Therefore, tenacious sub-soils, so-called hardpans, should be avoided. A moderately loose and friable soil, whether it be loam, sand, gravel, or the debris of rocky hillsides, will grow good grapes, other things being equal. Any soil rich enough to produce a good crop of corn will be rich enough, and if the soil is thickly strewn with small stones, so much the better, as they become warmed by the sun, and the heat is thrown back directly upon the vines and fruit, hastening the fruit in ripening. Retaining the heat for a longer period than the ordinary soil, and radiating it slowly by night, the temperature of the vineyard throughout the growing season is higher than it would otherwise be. The subjects of pruning, training, planting, etc., I have not mentioned as, doubtless, my article has been spun out too long already. I expect to explain my methods of training, pruning, etc., in the near future. Closing I remain yours in the work.

T. A. CHAPMAN.

Elcho Heights, Baltimore, Ont.

STRAWBERRY NOTES.—*Continued.*

(For the Canadian Horticulturist.)

To my mind, and I ought to know a little of the world and its ways (now in my seventieth year), there is no occupation young or old can engage in that will give more *pleasure* and profit than the growing of small fruit.

Practical men grow fruit to make money. Men of means grow for the pleasure of having this noble and luscious fruit fresh from their own garden and for their table.

But to those commencing and with limited means, I would mention a few out of the seventy-five or more varieties I grow at present.

I am at present testing sixteen new varieties. Some of them I have fruited four, three and two years. Of these the *Cornelia* is offered for sale by several Canadian fruit-men for the spring planting. The other two are Crawford's also, his Nos. 6 & 20. These I consider fully equal to, if not better, than the *Daniel Boone*. I have no *axe* to grind in mentioning these.

To those who have not grown these I am about to mention, I can truly recommend them.

1. *The Crescent*. It is by all odds the earliest and best bearer of any of the early varieties. Quality not the best, but if well grown, would pass for the *Wilson* any day.

2. *Captain Jack*, if grown in narrow rows and land as it should be for the strawberry, will please the grower every time. If the grower has no other staminate variety that blossoms earlier than the *Captain Jack*, it will do to plant beside the *Crescent*.

3. *Windsor Chief*. It is a good bearer and good color, and well flavored.

4. *James Vick* will do to plant beside the *Chief*. Immense bearer. The plant will take care of itself.

5. *Manchester*, a pistillate, and if

well fertilized, will astonish the grower with the size of berry and amount of fruit.

6. *Phipps* will do to fertilize the Manchester. Wants plenty of room; it makes large stools, often a dozen or more fruit-stems.

7. *Glendale*, late, plenty of fruit. Plant will care for itself.

8. *Cumberland Triumph*. No better shipper than the Manchester, yet I admire it. It is such a noble berry, and perfect shape and plenty of them. This will be the fifth year in the same bed with me, and if the spring frost does not take the blossoms, I expect a bountiful crop.

9. *Sucker State*. Good grower and bearer. One of the safest to plant.

These ought to be in every collection. I can recommend them with all confidence to be what all "catalogues" say of them.

There are many more I may write about again if spared.

Fish Creek, Feb. 17. JOHN LITTLE.

APPLE TREE BORER.

MR. EDITOR.—In the *Horticulturist* of February, H. asks how to keep the borer from apple trees. Last midsummer one of my best bearing crab trees suddenly withered and died. On examination I found the borer had completely girdled it, and commenced work on four others. In the spring I had driven the caterpillar from my currant and gooseberry bushes and saved a good crop by mixing about two tablespoonsful of paris green in a pail of air-slacked lime and shaking the mixture twice over the bushes before the fruit had fully formed. The Paris green could not be applied in this way on the trees; the best thing I could think of on hand was a bar of common yellow soap; dipping the end of this in the paris green, and rubbing it on the trees attacked. I

think I stopped operations of the enemy as no new holes were bored up to the end of the season.

Yours truly, F. F.
Cape Elizabeth, Lake Rosseau,
Muskoka, Mar. 13, '85.

MISTAKES OF FRUIT GROWERS.

(By Peter Pruning Knife.)

There is probably no branch of husbandry in which there are greater mistakes made from want of knowledge and experience than in fruit growing; and I think I may assert without fear of contradiction that fifty per cent. of all the fruit trees and plants ever planted in this Province have never produced fruit enough to pay for themselves, let alone the cost of planting, use of the ground, cultivation, &c., and this percentage would be largely increased if confined to the northern portions of the country. This may seem like an extravagant statement by those living in fruit sections, but experienced fruit growers even there will bear me out in this assertion by their own experience. I propose to point out a few causes of this great loss to farmers and fruit growers (for it is a loss which, if correctly estimated, would aggregate millions of dollars), and also to suggest some remedies.

The 1st mistake of planters is in selection of soil and location. Farmers in planting an orchard are generally anxious to get it near the house, and in doing this generally put it in some corner near by without stopping to consider that the land may be too low or wet, or perhaps too high and exposed for tender varieties of fruit. Trees will not thrive, as it is sometimes expressed, "with wet feet," nor will tender varieties thrive when exposed to severe cold winds.

Remedy.—Seek good, dry, sheltered locations for fruit trees and protect the small fruits by mulching in winter.

Mistake No. 2 is in the preparation of the soil. No farmer would expect a crop of grain or roots of any kind without first preparing the ground for it; but thousands of them seem to think this wholly unnecessary in planting trees, and they dig post holes in the sod, or among wheat, or almost anywhere, and stick them in and then perhaps find fault with the nurseryman or weather or something else because they don't grow.

Remedy.—Thoroughly drain, enrich and pulverize the soil, and dig holes large enough to straighten out all the roots in their natural position.

Mistake No. 3 is in selecting and ordering trees and plants. Ordering trees and plants from agents whom they know nothing about, and varieties that are not adapted to the climate and soil, simply because the agent recommends them and shows some high-colored beautiful picture of the fruit, has been one of the greatest mistakes of planters, and one that has cost them dearly. One-half or more of the fruits that have been thus recommended and planted in the northern parts of this country have proved worse than useless; they have not only failed, but they have discouraged planters in putting out others that are adapted to the climate, and thus crippled one of the best industries of the country.

Remedy.—Become a member of the Fruit Growers' Association, read their Reports and the *Canadian Horticulturist*, and post yourself on the varieties that do succeed in your locality, and then order direct from some responsible nurseryman, and don't accept any variety you don't want because somebody recommends it who has trees to sell.

Mistake No. 4 is in time of planting. Many have made the mistake of

planting tender varieties of trees and plants in the fall in exposed situations, and they have been killed by frosts before they have had a chance to grow. Hardy varieties may be planted in the fall in protected localities, or where they will be covered with snow or some artificial covering; but as a rule spring planting is preferable. Some plant in some particular time in the moon, and often wait till dry weather comes in the spring, and lose many of them in so doing.

Remedy.—Plant as early as possible in the spring, and plant in the *earth*, not in the moon or any other planet.

Mistake No. 5 is in not properly cultivating and caring for trees and plants after they are planted. Who would expect to have a hill of corn or potatoes grow after they were planted without hoeing or cultivating, or much less if they sowed oats or other grain between the rows? Yet this is the way thousands of young trees are treated. What gardener would look for a crop of cabbage or celery by setting out the plants and then leaving them to struggle with the weeds? Yet this is often the fate of small fruits. Who would be silly enough to think of pasturing a corn field and look for a crop of corn? Yet thousands of young trees are broken down annually by horses and cattle.

Remedy.—Cultivate your trees as thoroughly as you would corn or potatoes, particularly when first planted. Don't attempt to grow grain amongst them. Take as much pains with a strawberry as you would a celery plant, cultivate a currant or gooseberry bush as much as you would with a hill of beans; keep your horses and cattle in the pasture or stable where they belong, and don't use them for pruning purposes.

February, 1885.

THE NEW VARIETIES OF GRAPES IN PROVINCE OF QUEBEC.

August and September of last year saved the grape crop from utter failure predicted during the unfavorable early part of the season. The exhibition of the Montreal Horticultural Society and Fruit Growers' Association of Quebec was too early in September for a tolerably fair display of outdoor grapes, but the Abbotsford Fruit Growers' Association, held this year at Rougemont, Rouville County, on the 25th of September, had the finest display ever held in this Province. In outdoor grapes, Mr. Chas. Gibb had on exhibition thirty-four varieties, my own of sixty-five varieties, and several very creditable smaller collections. Mr. Gibb has infused a wide spread interest in the cultivation of fruit in general, and his long labors are yearly showing beneficial results. Well deserved praise is bestowed upon him from all quarters.

ON WHITE GRAPES.

Lady, after the vine becomes established, proves productive and generally very satisfactory.

Grein's Golden ripened for the first. It has a fair sized bunch and berry, skin quite thin, is distinct in flavor from other white varieties, partaking somewhat of the plum. It is healthy in foliage, a good bearer and good home variety.

Belinda, *Antoinette* and *Carlotta*, Miner's seedlings, ripening in order named, are likely to all succeed here. *Antoinette* is preferable, as the best grower, and better in flavor than *Belinda*.

A Concord hybrid, No. 5, of Mr. G. W. Campbell, of Ohio, gave a very good impression. Resembles the Concord in some respects, but earlier and better.

Prattiss was more satisfactory this season, ripened earlier and was loaded,

and a good portion of the bunches had to be cut out, which practice is very necessary here to ensure earliness in ripening. It may yet succeed for this Province generally.

Faith bore as heavily as it did last year. It has a small berry, and long, loose bunch, remarkably strong grower. In all notices I see of it south, is classed as an early variety. It does not ripen here before Delaware, unless about half the fruit is cut out.

Duchess did better than last year. It is still much smaller in berry than southern specimens sent us. Fruit in quality quite good.

Lady Washington, unfortunately too late by a good deal. Regret this, as the bunch and berry are admirable. Have given it close attention without corresponding results.

Pocklington. "The Golden" is also too late for this Province, though it was inclined to bear somewhat earlier this season, and improved in size; the color claimed for it is a wild exaggeration.

Empire State and *Mason's Seedling* I look forward to with no little interest. The former is well endorsed by Mr. Ricketts, and the latter by Mr. Bush, of Missouri, a very careful and reliable authority.

ON BLACK GRAPES.

Early Victor, after three years fruiting, sustains its reputation. If one-third to one-half the bunches are cut out, it is vastly improved in size and earliness.

Dempsey's No. 25 (which I have noticed in Ontario Report as a white variety) has fruited here for four years, quite as large in berry as any of Rogers' blacks, and in bunch compares with Barry. Has proved earlier than any of the Rogers' of its color, and quite as good in quality. Now know sufficient of it to recommend it highly.

Waverley grafted from scion sent me by Mr. Ricketts in 1882; in foliage is not as strong, or in bunch as showy, but the fruit is delicious, and is all claimed for it by its originator.

Burnet is still highly prized, though late for our Province generally. I have seen unfavorable criticisms from correspondents in *Horticulturist*, and felt inclined to reply to them. If the cultivators would remove a reasonable portion of the clusters when fairly formed, the treatment would sustain my estimate of this fine grape.

Early Dawn has proved here utterly contemptible.

Linden not much better.

Belvidere in bunch and quality a trifle better than *Champion*, though some later.

Worden still pleasing and satisfactory, and preferred, all things considered, to *Moore's Early*.

ON RED GRAPES.

Here I can note some advancement.

Poughkeepsie Red gives a very favorable impression. It is in fruit larger and quite as good as *Delaware*, a better grower and stronger foliage.

Challenge, a New Jersey grape, in some respects reminds us of Northern *Muscadine*, quite as early, larger in bunch, less foxy, and does not drop its berry.

Mary (Stone and Wellington) impresses us favorably, has a good deal of Salem character, but the foliage less liable to mildew. Inclined to consider it an improvement.

Ulster Prolific bore its first fruit; a favorable introduction; is a strong grower and abundant bearer, undoubtedly requiring much thinning out as vine gets strength.

Onasso, a beautiful dark amber of good size and pleasant flavor, is gaining after three years fruiting.

Vergennes seems disappointing on all

sides as to its claims for earliness. Fruit should be well thinned out.

Gaertner, Rogers' No. 14, am inclined to think has been somewhat overlooked, and should be more cultivated. It is quite early here, a little after *Massasoit*. Good sized berry and bunch, and agreeable in flavor.

The sum total of our success here, where a few years since the culture of outdoor grapes was very limited, and when attempted, the treatment, if any at all, was at best slovenly, is in ample space in planting, judicious thinning out of clusters, proportioning fruit left to strength of foliage and habit of vine, careful systematic fall pruning, and laying down and covering with earth, simply, just before the ground freezes up for the winter.

WM. MEAD PATTISON.
Clarenceville, Quebec.

THE ROSE.

The three most useful families or orders in the vegetable kingdom to man are Graminae, Leguminosae and Rosaceae. The two first contributing to his actual necessities, and the last to his tastes, in the shape of wholesome fruits and pleasing ornamentation, and I am not aware of a single specimen of the fruit, or the family, that is poisonous. The kernel may contain prussic acid, but in such small proportion that no fear need be apprehended. It is a geological fact that no organic remains of this family even in the diluvial deposits (the latest) of the earth's crust occur, evidently demonstrating the fact that it has appeared simultaneously with man, for the purpose of developing his mental and moral faculties.

Man stands at the head of creation in the animal kingdom, the Rosaceae family at the head of the vegetable, each being adapted for the other, and to keep pace in the development of progress.

The Rose proper from which this important family takes its name, is indigenous only to the northern hemisphere, and generally distributed through Europe, Asia and North America. The Dog Rose (*Rosa Canina*) to central Europe, the Provence and Manetti being only sub-varieties; the Sweet Briar, the eglantine of poets, is indigenous to both northern hemispheres. *Rosa Gallica*, I presume, to France; *Rosa spinosissima* to Scotland; *Lutea* to Austria and Persia; *Boursault* to the Alps; *Damask* (*Damascena*) to the Levant; *Cinnamon* (*Cinnamomea*) to the Pacific slopes of North America; *Bourbon* (*Bourboniana*) to the Isle of Bourbon; the *Banksia* from China; *Rosa Indica Odorata*, the Tea Rose, to the same place; the climbing Ayrshire Rose (*Arcensis*) to Britain, and the *Rubifolia*, another climber, to the prairies of North America. All have a distinct characteristic from each other, and from these sources emanate Roses now in cultivation.

Really the Rose in its primitive condition cannot vie in appearance with some of the lower orders, for example, some of the *Malvaceae* and *Lilaceae* families, but the essential elements for development in the Rose are more abundant. The first step is to change the original condition of things by cultivation; this will evidently produce more petals than the five in the original, no doubt at the expense of the stamens, and when the blossom becomes thoroughly double all the fructifying organs are changed into petals, and its natural powers of reproduction are gone. I think, upon examination, that it will be found that the number of stamens changed will correspond with the additional number of petals. The Roses now in general cultivation are mostly hybrids, and by a combination of the different elements have produced results which have developed in the Rose of

the present day, the varieties being *ad infinitum*. To suppose that the Rose has now arrived at the acme of its gorgeousness is a fallacy. Progress does not admit of a climax. The Roses of the future will to a certainty far surpass those that are now in cultivation. The cultivation of the Rose is very simple, only requiring the same treatment as in a currant bush, namely, cutting out superfluous wood and spur-ring the branches.

The Rose to be grown to produce great effect is budded on the Dog Rose (*Rosa Canina*) at standard heights, say from three to five feet, and planted terrace fashion, which I have seen and manipulated when a lad working in a gentleman's garden in the lowlands of Scotland; but, after all, when grown in this manner for a few years they soon decay and become unmanageable, consequently require to be replaced. I think all Roses do best when worked on the Manetti, which is very vigorous, and will produce better blooms and more vigor of growth, than when grown on their own bottoms. Example, what would a Giant of Battles be on its own bottom, a poor, puny thing, and many other like it. Roses grown on their own bottoms are just as troublesome to keep in order as those worked on the Manetti, particularly hybrid Chinas. When accustomed to know the difference between the stock and the variety worked on it, the suckers are easily removed.

Giving protection to the Rose in the country is absolutely necessary, which is easily effected by bending the canes and pegging down close to the ground, and covering with almost any kind of haulm. I have found pea straw, when it could be procured, the best. Care should always be taken not to put on too thick a covering. On the approach of spring remove it, tie the bushes to stakes if desired. The next

trouble to contend with is the slug and thrip, which may be very easily kept under control by white hellebore or tobacco water. Although Rose culture is somewhat troublesome, you are amply remunerated for your pains. The Rose is a Rose, and it is not every shrub that is a Rose; and even when grown under adverse circumstances, it is yet a thing of beauty.

SIMON ROY.

Berlin, 17th Feb., 1885.

THE WILLOW.

P. E. BUCKE, OTTAWA, ONT.

In putting in a plea for growing the willow as a valuable and profitable addition to the industries of Ontario or the North-west, I feel that I am laying myself open to the censure of many individuals who perhaps have only partially looked into the subject. Any man who has a low lying swail of a few acres covered by a thick willow growth, which he has undertaken to clear up, will realize in this plant the fact that "it has come to stay," as our American neighbors term it.

The *Salix* family is one of the largest, if not the largest, of any of the vegetable kingdom. Loudon gives 282 species, 51 of these are credited to North America. The willow is found in every conceivable climate, extending from the tropics as far north as the Arctic Circle; it grows on all kinds of soil, from the banks of low stagnant pools to the highest elevations. The plants range from the tiniest osier to the majestic forest tree of six feet through. It would be rather a blot on creation if so large a portion of its wealth had been bestowed on such a widely-distributed product should it prove to be a useless article.

Many people do not plant trees because of the length of time it takes them to grow. This complaint cannot be brought against the *Salix alba*,

white willow of Huntingdon. Its growth, though not so rapid as the mushroom, or the historic gourd, which grew up in a night, is yet of sufficient rapidity to satisfy the most fastidious. In ten years from the cutting it will make a tree from nine to thirteen inches through, and from twenty-eight to thirty-five feet high. On the Western American prairies, where it is extensively grown, it is claimed to be the best tree for the early settlers. It is also claimed that it will reproduce itself with great rapidity from the stump, no matter how old the tree was when cut down. The wood is light, tough and elastic, easily worked, and makes valuable lasting timber; it splits freely, makes good sawn lumber when of sufficient size, and grows with a straight, tall stem when closely planted. It is used for tool handles, hoops, cooper work, &c.; the bark is employed for tanning and medicinal purposes, taking the place of Peruvian bark for intermittent fevers, the active principle being salicin. This tree should be largely cultivated in our North-west; being hardy and of rapid growth, it would prove very beneficial there both for timber and windbreaks. I would recommend it for planting between more durable and slower growing forest trees, or in plantations to take their place whilst they are coming forward.

The *Salix caprea* grows to a large size; the wood takes a fine polish; it is stated to be worth as much in the market as birch. Its bark is also used for tanning purposes.

Salix fragilis, or red wood willow, also attains to a good big tree; its timber is used for many purposes, and is valuable.

The willow chiefly employed for basket purposes in Europe is *Salix viminalis*. This variety is cultivated on low, level, moist soils. The planting should be made from cuttings.

which should be cut square across at the lower ends, so that the roots may come out evenly all round. The cuttings should be made from one-year old wood from nine to twelve inches long; these should be set firmly in the soil a good three-quarters of their length, in rows four feet apart, the cuttings one foot apart in the row. The plants should be allowed to grow two years without being cut, after which they may be cut close to the stump every autumn after the leaves have fallen. The cuttings are tied in bundles, and stood in water during winter, and are peeled when the sap rises in the spring. They are sometimes steamed and peeled in winter; but steaming spoils their color and injures their market value. Sap-peeled willows are always in first demand. By cutting the willows in the fall, the spring growth does not appear to be injured as it would if the shoots were removed during that season. These willow shoots are principally used for making baskets and chairs; for the frame work of the latter a coarser wild willow is used. Under favorable circumstances from three to four tons are grown to the acre. Three tons of green will produce one ton of the peeled cured article. The price varies with the demand; but in New York buyers only offer $5\frac{1}{2}$ cents per pound, delivered at the cost of the shipper, who would also have to pay 10 per cent. duty. They are on occasions, however, as high as 7 to 11 cents. At 6 cents per pound, \$120 per acre would be realized. This would give a clear profit per acre of \$80 or \$90, after paying freight, duty, and other expenses for labor; but if manufactured in the country and sold as baskets, a much larger profit could be made. I am indebted to Mr. Thos. Truss, of the Brantford Asylum for the Blind, who has kindly furnished some of the foregoing information respecting

the basket willow. He calls his willow the Welsh variety; whether it is *S. riminalis* or not I have not been able to ascertain; it is certainly a very fine variety for baskets and all sorts of wicker ware. Cuttings may be had from Mr. Truss at the rate of \$2 per thousand. Basket matting is nice light employment for either boys or women, and could be carried on during the stormy days of winter. There are large tracts of land which are overflowed every spring along the Ottawa, and in many places in Canada, that would be suitable for willow culture; and I see no reason why the basket industry should not be more largely added to the other manufactures of this country. Of course the necessary machines for peeling and splitting would be required, especially if the business were gone into on a large scale. The splitting knives and other articles are by no means expensive.

AMARYLLIS.

There is perhaps no plant cultivated by the amateur florist that is more easily grown when properly treated than the Amaryllis, and doubtless very few, if any, that more amply repay him for the time and labor spent upon them.

In cultivating any plant or shrub successfully we should know the conditions under which it flourished at its original place of growth.

These bulbs are natives of the Cape of Good Hope and South Africa. There they are subjected to a period of continual wet followed by a corresponding period of dryness. The heat of the climate is most intense during their period of dryness, consequently when growing they demand an abundant supply of nourishment and moisture, but during the season of rest a greater supply of heat and a lesser supply of

moisture. If the following rules be followed as nearly as possible there will be no difficulty in growing satisfactorily this very desirable plant:—

1. When you obtain your bulb secure for its reception a pot with a diameter about three times that of the diameter of your bulb. It may be even smaller than this, but see that in no case it exceeds it in size. Over-potting is perhaps the greatest error amateurs are likely to make in growing any plant, and unfortunately the *Amaryllis* is no exception to the general rule. This bulb will even flower better for being somewhat cramped so long as the drainage is good. Now fill the bottom of your pot to the depth of two inches with charcoal to secure perfect drainage, and fill in the remainder with good rich soil.

2. In planting be sure that one-half your bulb at least is above the surface of the soil. Please read this again before you proceed further, as there is perhaps no other point so necessary of observation as this.

Bear in mind that all the nourishment is taken in by the roots, and as these are located at the bottom of the bulb only, no nourishment can enter at the side.

3. Avoid pouring water over the bulb, for if it be allowed to enter at the neck the moisture may result in centre-rot, or if by chance it be absorbed into the bulb it may not entirely cause the death of the plant, but it is certain to materially weaken it, and will almost invariably destroy the tiny flower scape already formed between the scales at its base. Water should, therefore, invariably be given from beneath.

4. After the bulb has flowered a short season of vigorous growth should be given in order to provide for future bloom, for it is now that those little flower scapes are formed which, after a

season of rest, come forth in all their vigor and beauty to amply repay us for our time and trouble.

5. The necessary growth after blooming having been given, it should next invariably be given a season of rest. For this purpose you should not take it out of the pot, as it robs the bulb of much of its strength, and not unfrequently injures the flower scape so that it is entirely lost. When at rest give it only a very small amount of moisture, although it should not be allowed to entirely dry off, as in such a case you will be very apt to lose it altogether. It should not be hurried at this particular stage; it will make known its wants in due course by starting a new growth, after which water may be applied more freely. Take off the leaves only as they turn yellow, for removing green healthy ones only weakens the plant. By following carefully the natural requirements of growth and rest you have the surest way to secure perfect bloom.

The *Amaryllis* possesses this advantage over most other house plants, that it may be set away at any season under almost any conditions, and yet retain its vitality for months. Of the several varieties I shall say nothing, as the grower can choose those that are most agreeable to his or her own taste.

A. A. WRIGHT.

Renfrew, March 11th, 1885.

PRUNUS PISSARDII.—You who are fond of the rare and beautiful, buy a plant of *Prunus Pissardii* next spring. Its foliage is purple, which color is held more decidedly during the season than that of any other colored-foliage plant; and the leaves remain unharmed until after frosts. *The Rural* in this, as in all such matters, speaks from experience. It confidently advises its readers to try this plum, though the fruit itself is not worth much.—*Rural New-Yorker*.

MONTH OF MAY.

(Written for the Canadian Horticulturist.)

The blackthorn bloom falls on the spray,
The daisies deck the hill,
And May, the lovely maiden, May,
With joy each blossom fills:
Sweet May! the lark doth hail thee here,
The linnet on the tree,
With thee the summer birds appear,
The lambs call after thee.

Weary with toil, I wander, May,
Within thy peaceful bower,
Thou cheer'st me with thy merry lay,
And strew'st my path with flowers,
The meadows with their diadem
Of cowslips; shall I say,
That every floweret is a gem,
To deck the Month of May!

With blossoms on thy brow, dear May,
The primrose at thy feet,
And in thy hand the hawthorn spray,
So fragrant and so sweet,
Thou bring'st the lily to the bower,
The lily to the pool,
And to the bank that bonnie flower,
The sweet forget-me-not.

How beautiful thou art, fair May,
In robes of gold and green,
How happy is it round about,
Thy face, May, how serene,
And on thy cheek the virgin blush,
So beautiful to see,
And in the grove the sweet song thrush,
Is carolling to thee.

A thousand birds their joy betray,
To burst each bud to life,
And when thou smil'st, fair maiden, May,
Earth trembles with love and life,
So softly breathing, sweetest May,
How balmy is the air;
I see thee tripping o'er the way,
A vision bright and fair.

St. Mary's.

Mrs. W. H. W.

HYACINTHS.

(Addressed to a bed of Hyacinths blooming in a prison yard.)

O fair and beautiful! Why bloom ye here?
Your pure and wax-like forms strangely contrast
With ironed doors and windows iron-barred,
Where massive walls rise gloomily, shutting
Out light and heat, with only one hour's sun
(When in meridian altitude) to warm
Your earthy bed; but flowers have their own use—
Their teachings, fraught with gentleness and love
And truth, which fall on the beholder
Like the "dew upon the tender herb,"
Refreshing all with its kind, gentle power.

Music like flowers, and flowers
Like music, charm and calm the passions
Of the human breast; may this be *here* your
Ministry, where man degraded from his
Maker's image, lower and lower falls
Until he merits these dark, gloomy and
Incarcerating walls.

Flowers are indeed God's messengers
To bless and cheer a dying world, and point
With smiling face to the blest hope of the
"First Resurrection morn."

Owen Sound.

M. W. M.

SOME NATIVE ORCHIDS.

Perhaps in these days, when the Orchid mania is raging, and the uttermost parts of the earth are "investigated" to discover new species of this wonderful flower wherewith to adorn the Orchid houses of wealthy amateurs, a few remarks about our native varieties may interest those who, not having an abundance of this world's goods, are fain to content themselves with such specimens of the genus as inhabit the fields or groves of our native land.

The various kinds of *Cypripedium* are among the most showy of Orchidaceous plants in this section, and the beauty of their blossoms rivals that of some of their more favored sisters occupying conspicuous places in the greenhouse. The *Cypripedium acaule*, with its large, purple flower, nodding on the slender, graceful scape, is a veritable floral gem, and the more common *Cypripedium pubescens*, or Indian Moccasin Flower, with its golden blossom, so like a gigantic *Calceolaria*, is a plant which no one who loves the wild beauties of the forest would pass unheeded. The loveliness of both the preceding species pales, however, beside that of the *Cypripedium spectabile*, or Tall Lady's Slipper, a denizen of swamps in this part of the world.

There is something marvellous in the appearance of these great, white flowers, which have markings on the inner surface, delicate as if the tiny flecks of color were laid on with a brush held by a fairy's hand. The large sepals of these blossoms are white, or nearly so, which adds greatly to their beauty. Indeed, when looking at a cluster from a little distance one would not find it very difficult to imagine that the angel of the flowers had appeared to mortal vision.
—Mrs. H. R. L., *Hoosac, N. Y.*, in February number *Vick's Magazine*.



CATALPA.

Its showy flowers are white, slightly tinged with violet and dotted with purple and violet in the throat. See *Appleton's Am. Cyclopaedia*, vol. IV. pg. 98 99.

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THE Canadian Horticulturist.

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[No. 6.]

THE CATALPA.

The great object which the Directors have in view in giving, without charge, to each subscriber to the *Canadian Horticulturist* the choice of certain trees or plants, is that those things may be tested in different parts of the country, and in this way their ability to endure the climate, their adaptation to the various soils, and their value to us as Canadians may become more speedily known. An impression seems to exist in the minds of some that these things are a sort of bonus given to them for subscribing to the magazine. We desire to correct this impression, and to have our readers understand that these things are given not so much to benefit the recipient as to benefit the entire community. Often times they may greatly benefit the recipient, but even when the article planted proves to be utterly valueless, owing to the fact which is in this way ascertained that it is unsuited to our climate, or to the exposure in a certain part of the country; the knowledge of that fact, if it be only communicated, is of immense value to others, saving them from serious disappointment and loss. For this reason the Directors have made it a condition of receiving

these articles that the person who gets them shall in due time communicate to the *Canadian Horticulturist*, for the benefit of all, the results of his experience therewith, whether of success or failure.

For this reason in a very especial manner have the Directors offered the hardy Catalpa to our subscribers this spring. The reports that have come to them of its great value, both as a timber and an ornamental tree, have led them to believe that it may be valuable in a large part, if not in all parts of this Province. Letters have been received from subscribers asking if it would be hardy enough to thrive in their locality; if so they would select the Catalpa to be sent them. If the Directors knew that this tree was sufficiently hardy, and in all respects suited to the soil and climate of all parts of Ontario, there would have been no occasion for testing it, and it would not have been offered.

It is said of this variety of the Catalpa that it is remarkably hardy, much more hardy than the variety which has been to some extent planted in Canada as an ornamental tree, samples of which are to be seen in Hamil-

ton and other places where the climate is not more severe than in that city. As a tree for timber plantations it is thought by many to be unrivalled, because of its rapid growth, its adaptation to almost all soils and situations, its wide range of latitude, and its extraordinary success on the bleak prairies of the North-west.

It is also stated that it bears transplantation unusually well, suffering very little check therefrom, and very rarely failing to grow; that it is possessed of great vitality, and is almost wholly exempt from the attacks of insects and of diseases. The wood is said to be more lasting than cedar when used for posts, railroad ties, or other purposes where it is exposed to changes in moisture and temperature; and is also said to be capable of receiving a high polish, and to have a beautiful grain, which qualities make it a desirable wood for fine inside finishing of dwellings and for various articles of furniture. The tree is stated to have a very handsome and stately appearance, and in the early summer to yield a profusion of large, showy, sweet-scented flowers of unrivalled beauty, thus making it a very desirable ornamental tree.

If our readers will turn to the Report of the Fruit Growers' Association for 1882, at page 207, they will there find that Mr. Snel Foster, of Iowa, states that a tree of this variety of the Catalpa raised by him, and which had been three times transplanted, was cut down when twenty-two years old and found to measure fourteen inches in

diameter. He had a writing desk made from it which he mentions as being very beautiful. Trees six years from the seed measured six to nine inches in diameter, and twenty to twenty-eight feet in height. We also commend to their attention the article in the same report by the late Dr. Warder, pages 264 and 265, from which it will be seen that large plantations of this Catalpa are being made by railway corporations, because the timber of this tree is considered by them to be worth three times as much as the best white oak for ties.

Of the suitability of this tree for ornamental planting our readers will be able to form an opinion from the colored plate which we have had prepared expressly for this number. The flowers are succeeded by long, pendent seed pods, a sample of which is shewn at the foot of the plate.

If this variety of the Catalpa should prove to be adapted to general cultivation in any considerable part of this Province, the Directors will have done a work in calling attention to this tree which should earn for them the lasting gratitude of every citizen of Ontario. As to the probability of our being able to grow it successfully, see the letter of the Rev. L. H. Kirkley in the April number, page 80.

CORRECTION.

DEMPEY'S SEEDLING GRAPE.

The seedling grape referred to by Mr. Pattison on page 114, May Number, is Mr. P. C. Dempsey's Seedling, Number 5, not 25. This will explain the discrepancy.

EASY LESSONS IN BOTANY.

BY H. E. SPOTTON, BARRIE.

LESSON II.

We are now ready to look at the flowers. But before going minutely into the structure of any one blossom, we may learn something from a general glance at the flowering portion of each of the whole five specimens. Take the Buttercup first. Do you see that the flowers are *at the ends* of the stem and branches, and that there is only one blossom on each such end? How is it in Wallflower? The blossoms, you observe, have the same situation; they are all at the tops of the branches. But there is at the same time a marked difference between the flowering of this plant and that of Buttercup, which you doubtless discover at once. Wallflower has its blossoms *in clusters*; and while some of the lower ones have probably withered away, there are others in full bloom, and others nearer the top as yet only in bud. What about Hepatica? The flowers seem to be at the ends of stems, one on each stem, as in Buttercup; only, curiously enough, these flowering stems appear to be without leaves. In Dandelion, we seem to have the same arrangement as in Hepatica. The Dandelion, however, will be the subject of special examination by and by. In Geranium, the blossoms are in clusters, each blossom at the end of a little stalk of its own, and the whole of each cluster borne on the end of a much stouter stalk which *springs from the side of the stem*.

Now let us sum up all this; but first of all let it be understood that we shall use the word *inflorescence* to mean the *mode of flowering* observed in any plant. So far as we can tell, then, from the five plants before us, blossoms are produced either *in clusters* of some kind, or *singly*, and they are produced either *at the ends* of stems and branches,

or *on the sides* of the stems. If produced singly, whether at the ends or on the sides of the stem, we shall say the inflorescence is *solitary*. If produced in clusters, then the name to be given will depend on how the cluster is formed. If you put Wallflower and Geranium side by side, you will see that the flower clusters are not at all the same. In Geranium, the little stalks which bear the separate blossoms are bunched together, and their lower ends are all joined to the upper end of the stout stalk which carries the cluster; but in Wallflower the little stalks rise one above another from the sides of the stout one. As we go on, we shall find a great many other sorts of clusters, and in good time we shall learn the proper name to apply to each of them. In the meantime, you may content yourself with noticing, in the case of such flowers as come in your way, whether the inflorescence is solitary or otherwise.

When the flowers (in clusters or solitary) are found at the ends of stems, we shall say that the inflorescence is *terminal*. This is the case in Buttercup, in Wallflower, in Hepatica, and in Dandelion, but not in Geranium. How shall we describe the inflorescence in this and similar plants? In all plants which flower on the sides of the stems, you will find that the blossom (or cluster) begins its growth *in the angle formed by the petiole of a leaf with the stem*. Now the angle on the upper side of a petiole, where it joins the stem, is known as the *axil* of the leaf. So, as all flowers which are not terminal spring from axils, we shall call such inflorescence *axillary*.

Having now gained some general ideas as to the situation of flowers and flower-clusters, let us take a single blossom and see what it consists of. First take a Buttercup. It is clearly made up of a great many pieces, some

of one pattern and some of another. Those pieces which are of the same pattern, or type, will be seen to form a circle or group by themselves. In fact, all the parts of the flower are arranged in circles, or *whorls*, as they are called.

Look at the outer whorl of all. Count the pieces in it. There are five. Notice their color. They are green, or nearly so; at all events they are not so bright in color as the whorl next within. Take hold of one of these five pieces and pull it away from the flower. You see it comes off readily without disturbing the other four. This outer whorl we shall call the *calyx*, and each of its five pieces a *sepal*; and because we can remove each sepal without interfering with the others we shall say that the calyx is *polysepalous*.

Pull off all the sepals, and then look at the next whorl. This consists of five bright yellow leaves, and you may notice that the leaves of this second whorl are placed *alternately* with those of the calyx, that is, each of them is not immediately in front of a sepal, but in front of the space between two sepals. As in the calyx, you will find that each leaf of the second whorl is separate from its neighbor, and can be pulled off alone. This whorl of bright-colored leaves is the *corolla*; each of its pieces is a *petal*; and because the petals are separate from each other, the corolla is *polypetalous*.

Now strip off the petals, so as to expose the third whorl. In this the pieces are much more numerous than in the calyx and corolla, and are of a totally different shape. As there are *more than ten* of these pieces we shall not take the trouble to count them, but merely say that they are *numerous*. As with the calyx and corolla, each of these pieces of the third pattern grows separately from the others. Take off one, and if you have a magnifying glass

of any kind it will help you very much to see how it is made. First there is a slender stalk, then at the top of this a swollen part divided lengthwise by a kind of rib. If the blossom has been open for a day or two, you will find that this swollen top has split open down its outer edges, and that a fine yellow dust is escaping through the slits. The pieces of this third type are called *stamens*; the slender stalk of each is its *filament*; the swollen top is the *anther*; the two parts of the anther, separated by the rib, and containing the yellow dust, are the *anther-cells*; the rib is the *connective*, and the yellow dust is the *pollen*. We shall have more to say about the pollen presently. As the stamens are all separate from each other, and at the same time numerous, we may speak of them as *polyandrous*.

Pull off all the stamens, and we find still left, in the centre of the flower, a number of pieces different in pattern from either sepals, petals, or stamens. As before, however, they are all separate from each other. Remove one, and look at it through your magnifying glass. It is green in color, and the lower part has a swollen appearance, whilst towards the top it gradually tapers away to a hooked point. Very likely you will find some of the pollen from the anthers sticking on this hooked point. Try, with a sharp knife, to split open the lower swollen part. If you succeed, you will discover that it is hollow, and that it contains a little seed-like substance attached to the wall of the cavity by its lower end. Each of these pieces of the fourth sort is a *carpel*; taken all together they make the *pistil* of the flower. The hooked point upon which the pollen sticks is the *stigma*, and the lower swollen part is the *ovary*. The little body in the ovary is called at first the *ovule*; and later on in its history it becomes the *seed*. As the carpels are all separate, we shall say

that the pistil is *apocarpous*. When the pistil ripens it becomes the *fruit*.

When we remove all the carpels, there is nothing left of the flower except the small lump upon which all the parts of it grew. This lump is the *receptacle*, and we have examined the blossom of the Buttercup first, because in it *every piece is attached directly to the receptacle*.

The only other points to be observed in this lesson are, that the stalk which holds up a flower-cluster, or a *solitary* flower, is the *peduncle*, while the finer stalks which bear the separate blossoms of a cluster are the *pedicels*; but *leafless* peduncles, such as those of Dandelion and Hepatica, and stemless plants generally, are known as *scapes*.

WHAT THE PEOPLE SAY.

DEAR SIR,—I received my premium, and it is a fine one. I sometimes wish I could make my fellow laboring men test the profit and pleasure of a garden as I have done, there would be less miserable homes, and more preserved tomatoes, currants, gooseberries, rhubarb, raspberries, strawberries, etc., and much less poverty. We wage workers find money for smoke and some for drink, but a dollar for our fruit grower, CAN'T. What fools these mortals be. I live like a prince in the summer.

S. P.

London West, May, 1885.

SPRAYING WITH PARIS GREEN.

I tried the spraying with Paris Green, $\frac{1}{4}$ lb. to 40 gallons of water, on my orchard of eight thousand apple trees last spring, and believe it had a very good effect.

D. YOUNG, M.D.

Adolphustown, Co. Lennox,
7th April, 1885.

HORTICULTURAL NOTES OF A SOUTHERN TRIP.

BY WM. SAUNDERS, LONDON.

The transition from a temperature below zero, with bitter February winds, to the soft and balmy air of a southern spring, was accomplished with less than three days' travel; and when on the Gulf Coast, approaching New Orleans, the spring flowers were open, the maple trees bursting their buds, the birds singing merrily, and butterflies flitting about enjoying the sunshine. Gigantic magnolias and live oaks were to be seen on every hand, the ground was strewn with clumps of scrub palmetto, and camelias grown to a size never dreamt of in the north, were flowering freely in the gardens. The change was immense, and most agreeable. Having secured a location in the busy "Gate City," the Exposition claimed attention, Horticultural Hall being one of the chief points of attraction.

The grounds around the several buildings were decorated with a series of very large beds of various forms, in which were planted some forty thousand bulbs, chiefly hyacinths and tulips, with smaller beds of jonquills and narcissus. These were contributed by "The General Bulb Co.," of Holland. Notwithstanding that these bulbs had been carefully selected, a large proportion of the flowers were poor, especially the hyacinths and tulips; the jonquills and narcissus were better. The plants seemed to have had too much rain, and the insufficiently drained soil with water in many places but a few inches below the surface, was a condition very unsuitable to successful growth. Beds of Drummond phlox were just coming into flower, and these were not thrifty looking; but the beds of pansies were superb, the plants were vigorous and freely covered with very large and elegantly colored flowers. Mammoth cactuses, brought from Mexico, were

placed in prominent positions about the ground; many of them as big as the trunk of a large tree, and from six to eight feet high. About the Horticultural Hall the grounds were very pretty and well kept, but elsewhere they were in a rough and unfinished state, some portions sodded, and others merely ploughed and left in that condition. The intention had evidently been to finish all in proper style, had the necessary funds been available.

There were a number of very interesting trees and shrubs in the collections adjacent to the Hall, a large number of them having been sent from California; and the weather was just such as to tempt one to ramble among them. The following were specially noted, most of which were from San Jose, Cal. Six varieties of olives; a lovely shrub, covered with elegant purple flowers; *Polygala dalmanthorum*, *Spartium album* and *Genista europea*, both in bloom; *Ligustrum japonicum*, an attractive shrub, with thick, glossy foliage; *Eriobotrya japonica*, known as the Japanese plum, with very large, curiously plicated leaves; *Raphiolepis indica*, a lovely shrub, with beautiful foliage and small pinkish-white flowers.

Most of your readers are doubtless familiar with the appearance of Horticultural Hall. It is in appearance, and in fact, an immense conservatory, 600 feet long and 124 feet wide; the centre of which is filled with tables decorated with an immense number of varieties of fruit, and the sides filled with collections of growing plants. A large portion of one side is occupied with large circular beds of cactuses, including an immense number of specimens belonging to some 300 species, the greater portion of which is from Mexico. These range in size from an acorn to plants twenty feet high and more than three feet in circumference. Part of the space on the opposite side

is taken up with a tropical greenhouse, 250 feet long and 25 feet wide, in which is an immense assortment of southern plants, especially orchids, of which we counted no less than 850 specimens. These have been sent from all parts of the tropics, twenty or more of the number were in flower, some of the flowers being very brilliant and attractive, others curiously cut, fringed and spotted, and tinted with a variety of hues. There were in addition a number of other rare plants which it is unnecessary here to enumerate; and many objects of general interest, such as coffee trees with the berries on them, tea, cloves, allspice, cinnamon, black pepper and vanilla, all in a growing condition.

After a hasty general survey, the fruits were more carefully inspected. Attracted by the word "Canada," in prominent letters, that quarter was first examined. It was found that there still remained of the collections sent by the writer and our ex-president, Mr. P. C. Dempsey, seventy seven plates of very presentable fruit. It was ascertained that the Canadian fruit had been awarded two first prizes on single varieties, one on *Esopus Spitzenburgh*, and one on *Ribston Pippin*; a creditable result when we consider the immense efforts made by all the western States, and the fact that there were some twenty thousand plates of fruit on exhibition. While the apples exhibited in the Canadian collection were very fine and deservedly commended, they were entirely eclipsed by the exhibits from some of the western States. Arkansas carried off the gold medal and \$200 for the best collection of 200 varieties. The samples of Arkansas fruit were simply immense, no one accustomed to ordinary displays would have conceived that the varieties exhibited could have been grown so large. Missouri ranked next, and took one

gold and four silver medals: Colorado, Kansas and Nebraska had excellent exhibits, and carried off a number of prizes; so also had Michigan and Iowa. Many of the other states sent very good collections, but inferior to those already referred to.

J. Cheal & Sons, of Crawle, England, showed a collection of one hundred varieties of English apples, and Groux & Fils, of France, fifty varieties from that country, but neither of these would compare at all favorably with the Canadian fruit, and were, of course, far behind the western exhibits.

(To be continued.)

THE SCAB ON THE APPLE, AND TREE PRUNING.

(For the Horticulturist.)

The letter of Mr. S. Cornwall, in the April number, reminds us that the promised report of the committee appointed to experiment by the application of various substances likely to remove or lessen the scab on the apple tree, never came to light; we have had it, however, in instalments from time to time in these pages, from which it appears no cure has yet been found. It appears to me we must first find the cause.

It is encouraging, however, to learn by reports from various sections that the disease seems to be on the decrease, although I am sorry to say such is not my experience.

Were I to speak of all the causes suggested to me, or imagined by myself, it would fill your next number with matter very uninteresting to the reader.

Too much manure, has often been suggested as the cause, although one man (a successful fruit grower, too) assured me if I would dig a cart load of good manure under one tree, it would be free from spots the following year. Don't let any reader expect any such result.

I have thought that pruning may have something to do with it. I have pruned my orchard annually in June, seldom having occasion to cut off large limbs, but in endeavoring to preserve an open top, have cut off large quantities of small branches at every pruning. Have I not erred in over-pruning? From various sources I have collected the following:

"We prune to give symmetrical shape, to bring into bearing, improve the quality of fruit, impart vigor, &c. If a tree stands alone, is in health, and its roots are uninjured, but little pruning is required. *Many orchards require pruning because too much pruning has been done.* Every large limb cut off is a blow at the life of a tree. The leaves convert the food gathered by the roots into material for wood and fruit. If too much top is cut away, the leaves cannot perform this duty, and the roots die. Avoid pruning that will let the sun shine on the limbs or the body of the tree."

The *Gardeners' Monthly* says: "The pruning knife often injures as much as it benefits, and hence arises two schools: those who prune on all occasions, and those who prune not at all. Our late president, Rev. Dr. Burnet, says (*Horticulturist*, vol. 2, p. 139): Very few varieties of apple trees require much pruning after the early stages of growth."

In that excellent work, the *Canadian Fruit, Flower and Kitchen Gardener*, edited by our worthy secretary, at page 18, we read: "Every fruit tree grown in the open orchard or garden as a common standard, should be allowed to take its natural form, the whole efforts of the pruner, going no further than to take out all weak and crowded branches, those which are filling uselessly the interior of the tree, where their leaves cannot be duly exposed to the light and

sun, or those which interfere with the growth of others. Summer pruning tends to lessen the vigour of a tree."

From the fact that I have every year cut off a large quantity of wood, when all of the above remarks indicate that very few trees require much pruning when fairly started, I begin to think I have over-pruned, losing time, working to the detriment of my trees, and possibly of the fruit. Whether or not it may have been the cause of the scab being worse on my orchard than on surrounding ones, I am not prepared to say; perhaps our Editor or some of our readers will favor us with their opinion. Another idea strikes me. May not over-cultivation have something to do with it. The following I think I got from the *Rural New Yorker*:

"Two fruit-growers once procured the same variety of pears, from the same nursery, and planted the trees at the same time. They were cultivated, however, quite differently. One of the growers yearly cultivated in his orchard garden crops, with occasionally corn, applying liberal dressings of manure, under which treatment the trees grew rapidly, and not only improved in appearance and color, but bore early and gave large yields. His neighbor did not use his orchard for any other purpose than the growing of grass, which was occasionally mowed, plowed and seeded to grass again. The orchard that was kept in grass has on it to-day trees that are only half the size of those in the orchard that was cultivated with hoed crops. It has never borne as well, nor has it equalled it in appearance. The blight, however, has nearly destroyed the orchard that looked the most promising, while the slow growing trees are as sound as when first set out, although both orchards are very near each other. The pear orchard that gave its owner such heavy yields is nearly destroyed, but the other seems likely

to last several years, not a tree being affected with the blight."

Just as that first man did with his pear trees I did with my apples, and under high cultivation my orchard grew to be the admiration of the neighborhood. As the Editor tells us of his "Rowan Tree,"

"There was nae sic bonnie trees
In a' the countrie side,"

But after bearing heavily for a few years, they were, and are to-day, ruined with the scab.

A part of this very same orchard I sold some years ago, and its new owner, very much I thought to the detriment of the trees, seeded it down to grass, but the results have been in favor of non-cultivation, the fruit since gathered on the portion seeded down has not been nearly so much affected with the scab as the cultivated part.

But we are getting tired of the subject; we'll jump the fence, and without fear of our Editor being exalted above measure, add another word of congratulation to the many at the success of our little monthly.

He (Friend Beadle) comes out again in his usual happy style. Who would have thought he could bring so much of the beautiful and sentimental out of the old Snow Ball? But it's in him to cherish thoughts of *sweet long, long ago*, and such touching remembrances give to his letters an interest that will speak long after his pen has ceased to write. May which day be in the very far future.

The index to contents on the last page of the number is a decided improvement.

It is encouraging to find so many of our members giving us the results of their experience. More might do so with benefit to themselves and us. He who makes two blades of grass grow where one did before is a public bene-

factor, provided that they be in kind good, and that he tells us how to do it.

JOHN CROILL.

Aultsville, April, 1885.

SOME MARKET STRAWBERRIES.

BY T. C. ROBINSON, OWEN SOUND.

Wilson.—This is the most famous Strawberry yet seen in America, and without a doubt it has well deserved its fame.

Probably if it had not been originated till the present time it would win very little attention in competition with the improved varieties lately introduced. But coming when it did with no other large, good shipping and very productive variety then in existence, its sudden popularity is not to be wondered at. No fruit perhaps has received more opposition, not to say abuse. Its too dark color when over ripe, and especially, its *magnificent tartness*, furnished many a writer with matter for jest. But the men who don't *work for fun*, but *grow berries for money* finding the *Wilson* to ship well and give more dollars to the acre, with less labor than the high toned sorts demanded stuck so close to the *Wilson*, that to this day there are probably ten times as many *Wilson* strawberries slipping annually down chuckling Canadian throats than there are of all other varieties combined. True it is sour—don't let us attempt to deny such a self-evident fact. And in spite of the courageous assurances of some men that they like sour berries let us stick to it that it is too sour to just suit the public. And it is often small, too small with ordinary treatment. But it is pretty, it does ship well, the people do buy it fast, when they cannot get anything better, (and they generally can't) and it is immensely productive, where it succeeds.

But it does not succeed in many places. In the States the plant has

become so feeble from the red fungus called rust (sun scorching) in many localities that it has already been largely superseded in many markets. Even in Canada, on sandy soil near Lake Ontario I have seen it so feeble that some plants set out for forming matted rows had grown unrestrictedly the summer through without sending out more than two or three runners from each plant in the row. I think this failure arises largely from propagating from exhausted old plants, and also from lack of understanding the kind of soil it is suited to. Most market growers have planted on sandy land perhaps because it is so easily worked. But if they would try it on good clay loam and mulch it to keep the roots from heaving out in winter, they would probably be amazed at the difference.

But making allowance for all this, and for its almost youthful vigor and health in the northern and cooler districts in Canada, we must yet expect it to fail at no distant date, and look alive for something to supply its place.

Let us frankly confess that for good clay loam we have tested nothing yet that will just fill its place *as a shipping berry*; we have other exceedingly productive sorts, but they are not firm enough: we have other varieties that are firm enough but they are not sufficiently productive with like culture.

But on sandy land the case is different.

The Crescent.—(first known as *Crescent Seedling*, "*Parmelee's Crescent Seedling*" &c.) is more on such light soils than the *Wilson* ever was. The way in which the wiry little plants creep swiftly over an ugly sand bank under the hot sun, spending as little sap as possible on extra leaves and laying up all they can in fruit buds for next year's crop is sure to delight the fruit grower who has gazed in despair at his long cherished but wilting *Wilson*s. Why, I have seen

the Crescent fairly wilting in the evenings of a long drought, the leaves turning bottom upwards as if the hoe had run under them, but the next morning they were briskly upright, ripening their serried clusters with only the dew and cool night hours for refreshment.

The berry does not seem as firm as Wilson, yet it ships uncommonly well, and for sandy soils referred to where it is at its firmest, there will probably be little difference observed by fruit dealers in a season's shipment; and if you go to the market stand to buy a quart you will doubtless have them offered you as Wilsons, only fresher and better than other people's Wilsons "don't you see they are so much brighter and hand-somer."

The Crescent is truly a beautiful berry, and if not any larger than Wilson you will be abundantly satisfied with the extra yield from such light land. "Quality!" Oh, don't ask me! We are talking about *market* berries, and what does the public know about quality? when only low quality is offered them (!) "But the Wilson has quality!" Yes, truly: when the Wilson hangs on the plant *till the seeds turn yellow*, it is excellent flavour and you just notice the acid without being annoyed by it—*it's good*. But when it is ripe and good like that it is too dark—too *blackly* red—to sell well; moreover it is then *too soft* to ship well.

When it is in condition to ship well, that is when it is *red* but *not ripe*, it is too sour for the grower to eat, or the pickers. Now the Crescent may be picked and marketed at both those stages of ripeness or unripeness without much difference observable in appearance, but when first red it is not nearly so sour as Wilson, somewhat flavorless perhaps, but pleases the people as well or better than the severely acid Wilson of the same age; and when dead ripe it is quite palatable, though

without the Wilson's high flavour. Do you ask how it behaves on clayey loams? An immense bearer, but more insipid and less firm than on sand: well enough to try if Wilson fails, but where, as with us, by clean culture with runners kept off the Wilson gives nearly a quart to the plant, you don't need a better shipping berry.

The Crescent blossoms are imperfect. In a dry season the small quantity of pollen they frequently contain often proves sufficient for a good crop, but it is safer to plant Wilson or some other pollen bearing variety every 8th or 10th row running north or south. It is the hardiest strawberry plant I know of. But a market berry does not absolutely require great firmness. With the advance and spread of Horticulture each city and town begins to have a supply grown near at hand, and there are many berries quite firm enough to keep in good condition 48 hours after picking if not rattled about at station or wharf.

The Bidwell—is one of the best of these, it will even ship 100 miles at a pinch. But pick it for sale next day and you have a sure thing for profit, providing your soil and culture suit it. Not that I think it hard to suit in soil, it takes hold and grows well; better than that, it grows sabbimely wherever I give it a chance. But if you will have a crop I think you must keep the runners off. I think it is (if the editor will pardon the term) the best intentioned variety in the Catalogues, setting always about twice as many berries as it can possibly mature in the matted row. But give it a chance and then see! In the spring of '83 I put on a quarter of an acre of land about 5,000 Bidwell setting them a foot apart in rows two feet apart. The runners were kept off, the ground was mulched all over with a little over an inch deep of well-rotted manure. In the summer of '84 they shaded the whole ground with foliage, the leaves

interlacing even from row to row, and they set a larger crop of fruit than I ever saw before. Then a miserable fly punctured the blossom stem about half-an-inch behind the blossom, at such a rate that nearly half the blossoms seemed to be on the ground and I feared for the loss of the crop: meanwhile a severe drought had commenced, so that by the time the berries began to ripen no rain had fallen for about a month, and yet they ripened up fine large fruit during the remaining nearly three weeks of that dry spell, yielding me some 2,000 quarts from that quarter acre. When I add that the land was sandy loam, which the Bidwell is not supposed to like, and that it had been manured to only about half the extent that I think a crop of strawberries deserves, I think I have established my right to prize this variety.

It does not ripen evenly, showing a white tip on many of the berries and many of the largest samples are deformed, but it is one of the largest of strawberries, the quality is excellent, it is generally glossy and handsome, and customers will even get to ask for it by the white tip when they get to know its excellence.

The Manchester—is perhaps the most popular of the newer market varieties. In vigor of growth with me it closely approaches the Bidwell and in productiveness it is probably not excelled by any except the Crescent on sandy land, while on clay loam I think it will bear more. The berry is remarkably large and handsome, and exhibits a rich gloss that is remarkably attractive.

It seems to be a little firmer than Bidwell, but its value will chiefly be found in a near market, and for such a market I would rather have it than any other variety I know, for its season of ripening. It is medium to late, and in conjunction with Crescent, which is very early, would probably give the

greatest possible profit in strawberries from sandy land provided a good pollen bearing sort be planted near, for its blossoms are more decidedly pistillate than those of Crescent. I have seen it doing exceedingly well on rather stiff clay, in matted rows (doing well, that is, for *matted rows*), so that I consider it about the safest variety known for all soils. I wish the color were deeper: in a wet season many berries will appear to be on the green side, but the people will try them any way, and the flavor which is really very good, will soon widen the demand.

Windsor Chief.—I think this is superseded by Manchester. It is no bigger, not as firm, no more productive, and so abominably sour! Lots of people will eat it, but it almost screws my mouth up to see them do it. It is probably hardier and somewhat later than Manchester, and so may be more reliable for localities where strawberries often get winter-killed, or the crop blasted by a late frost. It certainly is immensely productive; but I, for one, am quite ready to kick it out, in good strawberry regions, to make room for Manchester.

James Vick.—I have not fully tested this. It certainly is a fine vigorous grower, appears very hardy, and is astonishingly productive. I don't think much of the quality, about like Crescent or Wilson, but that does not make so much difference in a market berry, as before intimated. It certainly is very handsome, and appears to me rather firmer than even Wilson. Is it large enough to the last? is the one remaining question upon which I require to be satisfied before setting it out for market by wholesale. In the matted row I think it likely to prove too small, but with runners cut I expect considerable things from what I have seen of it.

Sharpless.—People seem bound to make a market berry of this after all.

Put it on light land, give it just enough manure to tantalize it, cut the runners now and then, and you will have some very fine berries which the birds and casual visitors will reduce to about one-tenth the number of quarts that you would get from Wilson or Crescent on the same ground. Its one of the easiest berries to lose money on that I have tried.

But let the owner of a rich loamy lot near to a city or large town set it out eighteen inches apart in the row, rows three feet apart, mulch the whole ground with well rotted manure and promptly repress all weeds and runners, and I should expect him to average at least a pint per plant under average conditions of climate. Will that pay?

The blossom of the Sharpless seems tender, often blasting with a slight late spring frost that varieties like Crescent, with hardier blossoms, would escape. But it is rather a late variety so that the frosts are generally over before it is out in full blossom.

Of newer varieties,—Cornelia, Atlantic, Lacon, &c. I must acquire more experience before speaking positively. Have any "*Horticulturist*" reader tested them?

EDIBLE MUSHROOMS.

In cutting out, pulling off edible mushrooms which are more commonly grown by what is called a brick of spawn, but more properly named myosilium, the mushroom is only the flower, the plant is under ground, care should be taken to cover up at once with earth the detached part of the stem so as to prevent the fungus fly from depositing its eggs, the grubs of which will speedily destroy the whole plant. This *modus operandi* is well understood in some parts of Europe where mushrooms form an essential part of food.

R.

Berlin, 6th April, 1885.

'THE JUCUNDA STRAWBERRY—HOW TO GROW IT.

The Jucunda is the grandest berry that ever appeared in our markets. It has always brought the highest price, and large quantities of other varieties have been sold for it. It has been introduced under new names, as Abraham Lincoln, Field's Excelsior, &c. One grower sold over 300 bushels from a day's picking, at \$16 a bushel. It has brought a dollar a pint—ten cents a berry. Notwithstanding, it is now rarely found in market, and but few raise it for home use. This is because it requires more skill and care in its culture than the average grower can give.

It originated in Europe, and the plant is not quite as vigorous and hardy as our native varieties. The young plants are always small and their roots seem to be too tender to resist much freezing and thawing, for this variety is among the first to get heaved out. Its blossoms are perfect, and it continues in bearing a long time. The fruit is very large, roundish, conical, and quite uniform in shape and size; color, very bright glossy scarlet; flesh, firm and sweet with a peculiar musky flavour that nearly every one enjoys.

The idea prevails that the Jucunda can be grown only on heavy soil; but this is a mistake. I have had it in great perfection on light sand. We might as well learn first as last that plants do not live on the soil, but on the plant food contained in it, and this food can only be taken up in solution, and when the air can circulate in the soil about the roots. This is the reason why stirring the soil promotes growth, and why florists use unglazed pots and soil that remains porous. When a crust is allowed to form on the surface plants make but little growth, and if the roots remain any length of time under water growth ceases entirely and death will

follow. Keeping the surface loose with a mulch is equivalent to stirring the soil.

The skill and care required to grow the Jucunda to perfection will answer perfectly for any other variety. The following method is adapted to those who are willing to give extra culture for the greatest perfection in fruit:—

The soil should be well drained, deep and rich. If it slopes to the east or north, so much the better; but in any event it should be sheltered on the west, for the foliage of this variety cannot endure our hot, drying winds. This is true of many others. I have seen a patch rusted everywhere except for a short distance on the east side of a fence.

As early in the spring as the ground is dry enough to work, clear it of all rubbish and stir it thoroughly to the depth of five or six inches; after which it should be plowed or spaded to twice that depth. If an abundance of old, well-decomposed stable manure is at hand spread over the surface a liberal allowance, from two to four inches. In the absence of this a bushel of unleached wood ashes and ten pounds of bone dust to the square rod will answer. This should be well worked into the soil and the surface left smooth. It is now ready for planting. Such liberal manuring seems out of all proportion to the amount of plant food removed from the soil by a crop of strawberries, but it is not removed from the soil. The strawberry plant needs plenty of food to build it up to a condition to produce an abundance of fruit.

The roots, stem and leaves are made up of rich material. During the season of growth a large amount of food is stored up in the crown for the production of seed (fruit) just as it is in an onion or a parsnip; but the strawberry plant is perennial and is not entirely exhausted after producing a single crop

of fruit. This is the reason why a strawberry patch, when plowed under, furnishes so much food for the following crop. It is almost like plowing under a crop of clover. Even insects have learned that the strawberry plant is rich, for the larvae of no less than five of them feed on the roots and crown, while the foliage has a large number of enemies.

Select young plants and see that their roots are not exposed to drying winds or frost while out of the ground. Remove all dead leaves and runners and shorten the roots to three inches or less. Wash them thoroughly lest the larva of the crown-borer or strawberry-root worm be carried to the new bed. Put the plants in a pail with the roots covered with water, taking out one at a time to plant. Set in rows four feet apart, and twelve inches apart in the row, leaving the crown level with the surface and the earth pressed firmly against the roots.

If in a garden where the work is done by hand, the space between the rows might be occupied by some early crop that would not interfere with the plants, as dwarf peas.

Soon after the plants are set blossoms will appear, which should be cut off at once before they exhaust the plant. A little later in the season runners will start, and they too must be cut off. During all this time the ground must be thoroughly stirred, never allowing a single weed to share the food and moisture that is designed for the plants.

About the first of July strong runners will be starting out in abundance. Select two of the best from each plant and allow them to produce one young plant each, cutting off all the other runners through the season. Place these young plants on each side of the old one, and nine inches from the row. This will leave thirty inches for a path. Cultivation must be kept up all sum

mer, and the earth should not be drawn to the plants nor from them. If weeds be allowed among the plants, or if runners remain until a foot or more in length the best results can not be obtained.

Early in the fall, when rain is more frequent, and the surface of the soil is cool and moist, all deep cultivation should be discontinued so as to give the roots a chance to occupy the soil near the surface. These surface roots are very important and should not be injured. They prevent the plant from being thrown out by freezing and thawing, and have much to do in the production of fruit. If they be injured in any way the plant will at once commence to make repairs, and the work of storing up food for the next crop will be suspended for a time.

At the beginning of winter the bed—including the path—must be covered with straw or any light litter that will shade the ground. About two inches will be sufficient. As soon as growth commences remove this from directly over the plants, leaving it between. Give no cultivation in the spring. When the fruit is gathered cut off the leaves, stir up the mulch, and burn over the bed on a dry day. In a few days the plants will start again when you will have a new bed as it was at the end of the first summer, and it will need the same care.

By this method every want of the strawberry is supplied.

M. CRAWFORD,

Cuyahoga Falls, O.

BIGNONIA RADICANS.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

DEAR SIR,—The Bignonia is quite hardy in this locality. A rapid grower. The foliage very beautiful. A profuse bloomer, and it is very easily propagated.


Mrs. H. C. GWYN.

Dundas.

THE BLACK CURRANT.

A SUGGESTION.

(For the Canadian Horticulturist.)

There are many who think that black currants do not pay. True they do not pay some, because they are grown on dry sandy land. Now the black currant wants a good rich loam to do well and pay the cultivator. It is time and money wasted to try to grow them successfully on dry sandy soil. The black currant is a gross feeder, and should be liberally supplied with all kinds of manure, and the stronger the better. It is well known that the finest fruit is produced on the wood of last year's growth, and I suggest that we should plant closer—plant at three feet apart every way in lines at right angles to each other. An acre will then take say 4,840 plants. Now cut down yearly to three or four or more buds every alternate tree, as shown in this diagram:—

 The asterisks represent the trees intended to produce fruit this year, and the dots those which bore last year, and which have been cut down to produce strong growth for bearing next year. As soon as those cut down have started a growth of two or three inches they should be looked over; never allow a shoot more than will be required. It will be seen my motive for cutting down every alternate tree is to produce a succession of strong young wood and get fruit of better quality than could be had otherwise. Only grow the finest varieties; discard all inferior sorts. I have raised a very fine lot from selected seed; but I know of nothing easier to propagate than the currants from cuttings. So if an acre will take 4,840 plants, half that number, 2,420, will be in fruit yearly, and fruit of the finest possible kind. Some of our experienced small fruit growers may have carried out this suggestion, and if so

would they please tell us with what result in this journal. T. A. H.

Medora, Muskoka.

MISCELLANEOUS TOPICS.

BY A. HOOD, BARRIE.

WHAT SOILS DO APPLES PREFER?

It has often occurred to me that in planting fruit trees one very essential condition to success has received less attention than it deserves—I mean the kind of soil in which the different varieties are planted; and I don't think it is as well known as it ought to be that most varieties have some special choice, some particular kind of soil to which they are best adapted; and certain conditions of such soil as to wet or dry subsoils that are best suited to their requirements. Wet subsoils! Surely there is no fruit tree that delights in a wet subsoil!! To which I would say I am not quite sure about that; but there is one thing I am sure about, and that is, that if a man found himself so situated that he had no convenient place for his orchard that had a dry subsoil, he would give something to know what trees were best suited to a wet one. We live and learn, or at least we ought to do so, and he that lives and does not learn had better keep out of the fruit growing business. I formerly thought that all garden vegetables would do best in a light friable soil; but now if I wanted to grow pursnips I would select the stiffest clay I could find. I was once told by a late President of the F. G. A. that he thought a soil could scarcely be too light for apples, and he may have been right; but I think now that such a rule would not apply to all apples. I have been led into these remarks by a little experience I have had with the Gravenstein, which is, I think, the best apple we have of its own particular season, either for eating or cooking. I have a few trees in my orchard, a rather light

but good garden soil with porous subsoil, that are not making much progress—not, in fact, doing quite as well as other kinds amongst which they are growing; while at the same time my brother has a young orchard about a mile away on such a stiff wet clay that his plum trees, of which there were about 80, are all dead or dying, and most of the apple trees following their example, and yet a few Gravensteins under sod are doing well and bearing crops every year. Has any other member had any experience of this kind with any variety? If so it would be useful to have those experiences recorded, and I hope the next man who writes a book on fruit growing will collect such records and use them.

CARBOLIC ACID FOR ROOT-DESTROYING INSECTS.

In the early part of last summer I was passing by the house of a gentleman in this town, and he called me in to see his young wallflowers which to his great annoyance were dying off rapidly, without his being able to arrest the destruction. He pulled up sickly looking plants in my presence one after another, and at the rate they were going it seemed certain that it would not be long till the last of them was gone; and every one of them had lost all its fine fibrous roots. This convinced me that the trouble was not what is called damping off, because in that case the stalk or stem appears as if eaten partly through just at the surface of the soil. It must then, I thought, be insects possibly so minute as to escape observation, and I recommended my friend to try a weak solution of carbolic acid, scarcely expecting when I did so that he would follow my advice, knowing as a general thing that men would rather "advise ten others what should be done than be one of the ten to follow their own advising;" but

my friend loved his plants, and was anxious to save them, so he watered them with the carbolic solution—I think he said two teaspoonsfull to a pail of water—and did not lose a single plant after the application. That little experiment was worth a great deal to him, and it might be worth something to some readers of the *Horticulturist*, and should the acid prove equally efficacious against the phyloxera, who can estimate its value to cultivators of the vine!

FLAVOR OF GRAPES.

Last year was a new experience to me in regard to the qualities and flavors of different varieties of grapes—an experience that will make me more than ever cautious in receiving opinions and descriptions of such even from the pens of those who may be considered judges of such matters; and with respect to earliness I regard no man's opinion as conclusive, for admitting that the particular kind of soil on which a vine is planted may make a few day's difference in the time of ripening, thus making an early variety appear a later one, and *vice versa*, I find that the particular variety that is earliest with me one year is not certain to be so the next, and the one that I judge to be the best in quality one season is not certain to retain its superiority at the end of another year. I have usually regarded Rogers' No. 9 as A 1, and No. 15 and Delaware as coming next, Concord as just passable, and Clinton as scarcely eatable; but last season upset this classification altogether. Nos. 9 and 15 failed to sustain their reputation, and Clinton and Concord came to the front surprisingly; even the Champion became eatable, Clinton was preferred to No. 15 for eating out of hand, and Concord was pronounced by all who compared them as decidedly the best. I found no change in the Delaware, but No. 15

was watery and flavorless, and certainly not up to the usual mark. The Concord, I find, must be fully ripened before it is in perfection, but when in that condition it certainly ranks among the best, and as compared with it Rogers' No. 4 must take a back seat. All this, of course, is as they are grown here, and may not hold good elsewhere.

QUALITY OF WINE.

It is to be expected that such variations in the quality of grapes would make a corresponding change in the quality of wine as made in different seasons, as I presume is the case in all wine-producing countries; but that does not alter the fact that some soils and some atmospherical or climatic conditions are more favorable for the production of choice qualities than others. We are here on the northern limit—perhaps beyond the limit—of successful grape-growing. Are we also beyond the limit of successful wine-making?

I remember some years ago reading an article from the pen of Mr. De Courtenay, then engaged in wine-making at Cooksville, in which he argued that the climate was more favorable for that purpose north of 45 degrees than south of that latitude; and I think the reasons were that in the warmer climate the fruit contained too much sugar, and I think he said fermentation was apt to proceed too far at the expense of the bouquet. I have made small quantities the last two seasons with such success as to support Mr. De Courtenay's contention, as well as to be a very agreeable surprise to myself; and as to the quality, all who have tasted those two vintages are unanimous in their praise. They may not, of course, be equal to the best wines produced in the Old World, though certainly superior to those sold here as such.

Don't let me alarm the temperance community, for all the wines I have

sold have been for medicinal or sacramental purposes; and Scott Act or no Scott Act, for such purposes there will always be a demand.

LABELS.

It is a convenience in the farmer's garden, and an absolute necessity in the nursery, experimental plot, or seed garden that each variety of plant, fruit, or flower be legibly and correctly labelled in such a manner that one can tell at a glance what the variety is. Yet this point is very often neglected, and as a consequence, much bother follows, to say nothing of the setting or planting of stock that is impure or incorrect in name.

As I experiment largely with various fruits and vegetables, one item of which is a collection embracing several hundred varieties of potatoes, I am obliged to systematize the labeling of them, and adopt a mode by which a mistake is practically impossible. In sowing seeds in hot-beds or the garden, it is a matter of convenience many times to have the label show in a concise manner the date of planting, name of variety, and who the stock seed was obtained of—whether home-grown or not. For this purpose I mark like the following sketch,



which shows that the Little Gem Peas, stock seed of which was obtained of Wm. Rennie, was sowed April 15th. When planting stock is home-grown, the word "home" may be substituted for the name of the seedsman.

I use for labeling potatoes, or any crop of annual planting, pieces of pine or cedar 15 inches long, 1 inch wide, and $\frac{1}{4}$ inch thick. These I mark with a common black lead-pencil of good quality, the point being left blunt so as to make a firm, legible mark. This

will last one season at least if carefully done, and is more durable than any special preparation or garden pencil, either English or American, that I have yet tried. Cedar labels hold penciling the longest, I think; but pine presents a smoother surface, and usually holds sufficiently well for one season. Of course a tabulated memoranda of dates of planting, etc., is necessary; but this plan is a convenience, and at any rate forms a memorandum in itself.

For the fruit garden I use one-inch pine strips two feet long, planed on one side, and stencil on the name of variety in India ink, using a set of half-inch letters, which may be cut in small squares of brass by any stencil-cutter. After marking, the label is brushed over with boiled linseed oil. I have labels of this kind that have stood the vicissitudes and changes of our northern climate for years, and are as legible now as when put on. It is well to renew the coating of oil each season. If convenient, dip the sharpened end in coal tar before setting, which will prevent decay. Whatever system of marking is adopted, it should be at once concise and as plain as possible. It is not good policy to trust much to memory in a matter of this character.

Shelburne, Vt., 1885. W. H. RAND.

EARLY TOMATOES.

MR. EDITOR,—In the February number of *Canadian Horticulturist* I notice T. A. H., of Muskoka, remarks about Veitche's perfection pea, and having grown them in Victoria County, Ont., I can also recommend them. If T. A. H. would procure good seed of the Trophy and Canada Victor Tomatoes, sow them about first April in hot bed, when grown to one inch high take out of seed bed, prune the roots one-half, replant one inch apart, and when grown to two inches high again transplant, and prune roots one-half with a pair of

sharp scissors, so as to make a clean cut. At second transplanting put them into thumb pots, and sink in soil in a warm corner, or cover with sash at night, and expose to sun, wind and rain through the day, until warm enough to uncover altogether. By this time he will have plants that he can turn out of his pots and plant were wanted to fruit, they will then grow right along, and with good tillage and suitable soil, he will be astonished at the results. That was my way of treating tomatoes in Victoria County, and I have sold my first ones at ten cents per pound. If T. A. H. will prune out all surplus shoots after first fruit sets, he will be astonished at the rapidity which the fruit will show in ripening. Wishing the *Horticulturist* good success in its noble work,

I am yours respectfully,

F. J. JONES.

Watertown, Dakota, March 29, 1885.

ROSE GOSSIP.

DEAR SIR,—I will in this briefly conclude for the present my remarks on roses (commenced last month under the heading of "Certain Roses—as I find them.")

I endeavoured in my remarks of last month to give a small selection of Hybrid Remontant roses, which I considered particularly valuable to the amateur rose culturist. The list I know is a small one, but it is full of variety for such a small selection, and representative of the different colors and forms, and at the same time contains, as I think, the very cream of the roses of this class. Of course it does not include a tithe of the number of very fine roses, but the list is quite large enough for the beginner.

In addition to the Remontants it is usual (although not absolutely necessary) to have in gardens where roses are grown, a few summer roses. Among

the prairie roses the Queen of the Prairies appears to be the most popular. It makes a great show during its brief period of blooming; but is seen to the best advantage at a little distance as it is somewhat coarse in its coloring. Baltimore Belle is prettier, but is not so hardy. Gem of the Prairies is the largest rose of this class that I am acquainted with. It is slightly fragrant, which is unusual with prairie roses. It is a fairly good rose, perhaps the best of the family. I have never been so much in love with these prairie roses as with Remontants, Teas, and others. There is something wanting about them, a partial lack of rose-grace that others possess so fully. On the other hand it must be said in their favor that they are easily grown, and I must confess they make a grand show on a trellis or a wall when blooming. It is not well to grow these rampant growing roses in close proximity to Remontants, as they harbour and breed the different insects which prey upon the rose, and to the greater injury of the weaker and slower growing kinds.

In mosses the Common Moss is, I think, really the most beautiful, but the Crested, though not quite so beautiful, is the most valuable to the ordinary grower, as it is less subject to mildew than any other Moss rose. Where summer roses are grown that grand old rose (the best of all summer roses) the Common Provence or Cabbage, must not be left out. When properly grown it possesses all that can be desired in a rose with the one exception of the very ill-chosen name of "Cabbage." It would extend this paper too much to take up the Teas and the many other varieties of tender roses, and besides my experience with these has as yet been too limited for me to safely advise others at any length on the matter. I may just mention that among the few Tea roses which I have tried I have

found none which has given me more satisfaction than Marie Van Houtte. It is a first-rate winter rose for the conservatory. In the winter time, when there is but little sun, it entirely loses that rather coarse pink tinge which it generally assumes in summer, and becomes the most beautiful cream color. It will adapt itself to the conditions in which it may be placed better than any other of the Teas. The past winter, at the most severe season, owing to the cold, and perhaps more still to the darkening effect of the snow on the glass above them, all of my roses, with the exception of Marie Van Houtte, dropped their buds, or failed to open them; but Marie Van Houtte threw as fine or finer blooms than ever. As I think I stated before, I have found La France a particularly fine rose for the conservatory. I did not, however, test it the past winter as I did not bring any in from the garden in the fall. The small Polyantha roses are very suitable for a limited conservatory. I have two varieties, (I don't know if they are the best) but they both do exceedingly well. One is called Paquerette and is a most beautiful, pure white, perfect, tiny specimen of a rose; and the other, called Little White Pet, is, perhaps, not quite so beautiful, but is a most prolific bloomer and a strong grower. It is not as small as the other nor is it quite such a pure color, and though altogether not quite so beautiful as Paquerette it is worthy of a place in any conservatory. I would advise my amateur friends, who are really as yet but tyros in rose culture, not to make their first attempts with the very latest high-priced kinds. The little points of difference between these latest arrivals and the good old tried kinds may be very interesting to the connoisseur, but are altogether lost on the tyro. Although these new roses are many of them very beautiful, (and I am glad to see there

is such a craze for them, glad that there is such a passion for roses, new or old), yet I doubt that they possess any more *real beauty*, apart from their newness, than many of those good old kinds that have been before the public for years. I have seen thousands of plants of that famous new Hybrid Perpetual Marshall P. Wilder in bloom, and a beautiful sight it was, but my amateur eyes, unskilled in varieties, saw only my old friend, A. Colomb. I have also had an opportunity of seeing that fine new Tea rose, "Sunset," that was ushered in with such *eclat* last season, and I cannot see what greater value it could possess to the amateur beginner than that fine old favorite, Perle des Jardines, even admitting that its color is somewhat deeper. I don't wish to discourage anyone from getting these fine new roses, I only wish them to begin right. Get A. Colomb first, then get Marshall P. Wilder; Perle des Jardines first, then Sunset. Begin with the old kinds, and if you are successful with them you will get the new ones fast enough without advice from anybody.

I find, on looking over the *Horticulturist* of April (which arrived this evening), that I intimated that I would again take up the very dark roses. I, however, think that the two kinds I mentioned last month are as good a choice as I could make; perhaps adding Baron de Bonstetten, which is a very good dark rose. Some of the dark roses other than those I have mentioned are very subject to mildew, and all kinds that are subject to this disease had better be carefully avoided, as being infectious it is of serious effect in a rose garden. I will close these remarks by saying that in this country we labor against great disadvantages in the outdoor culture of the rose; but this very fact makes us, when we do obtain really fine blooms, prize them all the more,

and the satisfaction is correspondingly greater.

After another season's lessons I may take up this subject again, but next month I will take up some of our other flowering garden plants that I find most satisfactory here.

FREDERICK MITCHELL,

Inverkip, April 1st, 1885.

NOTES FROM CALIFORNIA.

Last fall one of our most successful fruit raisers left this country for California. He owned a beautiful fruit farm of fifty acres a few miles from Hamilton, on which was cultivated all varieties of fruit, beginning with strawberries, currants, gooseberries, raspberries, cherries, blackberries, peaches, pears, crab, grapes, and apples—in fact every fruit that is grown. He had a beautiful place, which should have satisfied any man; but his health becoming impaired, he was recommended to go to Los Angeles in California; so he rented his fruit farm for a term of years, and with his wife and family went to his new home; and this is how he writes to a friend describing the country and its capabilities. He begins by stating that his health is very much improved since he arrived last November. The climate is delightful; they only had the temperature down to freezing point twice before Christmas, and no frost since. The weather is like June in Ontario, for the grass and wheat are in as advanced a stage of growth as they are in the month of June here. He goes on to describe a piece of property which he purchased. It is on a street named Euclid Avenue, which must be a remarkable street, for it is seven miles long; it has two drive-tracks, and between these tracks in the centre of the road is a double track for street cars; there are four rows of trees the entire length, with palm trees at the

upper end of the avenue, which is at the foot of the Sierra Nevada Mountains, and the whole avenue is lighted up at night with electric lights. The writer then says he bought ten acres of good land for two hundred dollars an acre. The land is in good condition, and he says he will plant two and a-half acres with fruit right away: the varieties are described as berries, apricots, prunes, peaches, nectarines, pears, apples, guavas, persimmons, figs, grapes, English walnuts, dates, filberts, pecans, oranges, limes, and lemons. All these fruits grow to perfection. We intend after awhile to set out ten acres more in oranges, limes, and lemons. At this date there are green peas and garden vegetables in plenty, which are hawked round by Chinamen and sold very cheap. Roses and all varieties of flowers are in full bloom; and the soil is so prolific that if you put a slip of any kind of rose in the ground it will take root.

When I was travelling through the country from Canada I saw some curious sights; we passed by miles of cactus, some of them of enormous growth, some forty feet high, and from eighteen inches to 2 feet in diameter. There is one variety which has broad flat leaves, grows from twelve to fifteen feet high, and has large berries on it that resemble Lombard plums.

The writer then goes on to state the prices of different articles used in the household affairs, which are very reasonable. One article we will mention, that is flour. He says it is lovely roller flour, better than he can get in Canada, at least he gets nicer bread from it, and only \$2 40 per 100 lbs.

In describing the locality where he has pitched his tent, he says they reside in a beautiful valley entirely surrounded by hills, which rise gradually away, till you can see a high mountain the top of which has perpetual snow

on it. You can see this whitehead all the year round, and this particular mountain is called Old Baldy. We are residing about thirty-eight miles east of Los Angeles, which town we visited last week. This is a pretty town, but very filthy; they never clear the horse manure off the streets, consequently the whole city smells worse than a badly-kept horse-stable.

With regard to climate, it has only rained twice since we came, four months ago; yet the atmosphere is moist and everything looks fresh. The peach trees are in full bloom as are also oranges and lemons; and there is ripe fruit too, lots of it, on the trees; now very beautiful to look at.

There is one drawback to all this lovely climate, they killed a large rattlesnake a few days ago, and scorpions, chameleons, and other reptiles are in plenty.

Ontario, Bernardo Co., Cal.,
Feb. 26, 1885.

HOW TO GROW MELONS.

Montreal has long been noted for its excellent nutmeg melons; the way to grow them is in the following manner:

One of the principal points in growing good melons is the saving of the seed of good specimens. We generally choose the earliest to ripen, the best flavored, the best shaped, and heaviest melon for seed, and let them ripen thoroughly before saving the seed. The seed may be sowed in hotbeds in April, taking care to choose a warm, sunny time, for a couple of cold, cloudy days would cause them to damp off. The hotbed may be made with fifteen inches deep of hot manure one foot broader than the frame, banking it all round the height of the frame with hot manure, and putting five or six inches of earth in the frame before putting on the glass, leaving it in this state for about three days till

the first great heat is over, raking the earth over once to kill the weeds that are started. The seed may be sowed in five inch pots buried in the earth close together, as many as the frame will contain (where pots are not available sods turned upside down in the beds will do as well), putting five seeds in each pot buried one inch deep. At the end of three or four days they may be seen coming through the ground; this is the time they require the closest attention, for if they get too much heat they will grow too fast and topple over, or if they get a chill they turn blue in the leaf and wilt away. The hotbed should be kept at about eighty degrees heat. Melons can stand it over a hundred without injuring the plant, but it makes them grow too fast and tender. About the beginning of May trenches may be dug 14 inches deep by 2 feet wide and as long as you have hotbed frames to occupy the land, filling them with hot manure, being careful not to put in any dry straw manure, then covering it with the earth that has been taken out of the trenches to the depth of eight or ten inches, then put on the frame and glass, leaving it in this condition for twenty four hours for the earth to get warmed, raking the earth thoroughly before transplanting the melon plants, turning them out of the pots, putting one pot containing four stout plants in the centre of each sash. When they make a growth of three or four leaves nip off the top, so that they will send out side shoots for fruit. We need to be careful to give them air every sunny day, and closing the sashes at night. About the beginning of July when the vines have filled the frames and melons are formed the size of one's fist, then it is time to remove the frames and glass beginning gradually to harden the plants. Towards the ripening season it is a good plan to put shingles or small pieces of

boards under each melon to keep them from being infested with worms or from decaying if the ground is wet after rain. For late melons a few seeds could be sown in the centre of each sash instead of plants transplanted from another frame.

The best land for melons is a sandy loam, but any well enriched and drained will grow melons.

By this system of cultivation nutmeg melons have been grown to weigh from fifteen to twenty-five pounds and keep their fine flavour also. R. BRODIE.

BLACK KNOT—A FUNGOID EPIDEMIC.

With reference to Mr. Webster's article on his views on Black Knot which appeared in the *Horticulturist* for April, I would beg to state from observation and a slight knowledge of entomology, that he is wrong in stating that an insect is the direct cause of Black Knot in either the plum or cherry trees alluded to. The insect he alludes to is a fungus fly which deposits its eggs in the knot, which is yet in a green or downy state, not yet hardened, or it may possibly be a curculio, this being effected in the early part of summer.

On examining some knots I have found no grub in them, these evidently have not been observed by the insects, consequently they must not have been the direct cause. The fungus fly is not so numerous here as in Europe, mushrooms being more plentiful there, and form a special article for the perpetuation and propagation of their species.

Lichens on fruit trees or old fences are fungoids. The resinous pine knot is a fungus, the punk in a diseased maple tree, the "birkba," as boys call it in the north of Scotland, is the decaying birch tree used by the boys as a substitute for blotting paper, is also a fungus, and so on, *ad infinitum*; but this is enough for illustrations in so far as trees are concerned.

Herbaceous plants are also affected by fungus, *e. g.*, ergot in rye, rust and smut in wheat, also smut in Indian corn, and the rot in potatoes.

I may as an horticulturist (fungus being only a low form connected with the vegetable kingdom, but an important one) say all epidemics affecting the animal kingdom are of fungoid origin. Smallpox is nothing more or less than a crop of mushrooms of a low type upon the human body, which usually take some nine days before they are ready to throw off their spores or seeds—then look out.

The cholera, black plague (which almost depopulated the cities of Athens and London), yellow fever, and all forms of fever and ague, scarlatina, measles, whooping cough, hereditary pulmonary consumption, and others of an epidemical character, if minutely examined, can be traced to fungoid origin.

Fungoids perform an important part in the economy of nature. Every thing not in a healthy condition, in order to perpetuate the races, either animal or vegetable, must succumb to their influence; they are the agents to hasten decay, in order that the elements may go to the sustenance or formation of other organic substances.

I have observed an insect allied to the fungus fly—the dragon fly, which boys usually dub the devil's darning needle. His business is to keep in check the spread of the silk worm, tomato grub, and all other caterpillars of a similar type, otherwise we would have recourse to artificial means to guard against their ravages.

The fungoid theory, still having reference to the vegetable kingdom, of epidemics is not generally understood even by a number of our medical practitioners, and inventors of patent medicines not having a thorough, or may be only a superficial, knowledge of botany. They usually treat as to effects, not

having any knowledge of the cause, and this can only be acquired through a thorough knowledge of the vegetable kingdom through which the causes originate. I think this is enough for the present.

R.

Berlin, 6th April, 1885.

P.S.—In alluding to the Black Knot fungus on the plum, I forgot to mention another fungus affecting the fruit of the plum tree, which usually exhibits itself in the shape of a small bladder. If you take a section of it under the microscope, you will find that I am correct.

R.

EXPERIENCE IN SPRAYING WITH PARIS GREEN.

MR. EDITOR,—As the time is near for our fruit trees to put on their beautiful clothing of bloom, which alone gives to us the expectation of a coming harvest, I send you a little of my experience as a note of warning in the use of Paris Green for destroying insects, or as a remedy for the curculio. The story of the Indian is good—perhaps as near the mark as we can get: first catch him, and then you can deal with him. I have tried coal tar burning under trees with sulphur, making a dense smoke; have placed a pot full in a calm night, and let it burn for hours to no purpose; have tarred paper and wool, and tied them about the trees, and afterwards found the curculios sleeping in the folds in safety. For two years I have used Paris Green, one-third to one-half teaspoonful to a pail of water, thrown over the trees by a hand-pump in the form of spray, beginning before all the blossoms had left the young fruit for the first application, repeating the application for several weeks in succession on apples, plums, pears, &c. The young apples sprayed continued to grow till the third application, when I noticed the edges of the leaves began to turn brown and present

a dry appearance, the fruit to almost stop growing, and to stand still by the middle of July. When the apples were about one-half size they began to turn a pale red and to drop, while the leaves fell as in autumn. A Duchess of Oldenburgh acted in a similar manner: not one-half of the fruit was fit for cider, while some hung on till October no larger than hickory nuts. One red Astrachan tree, very heavily laden, was only sprayed on one side; the sprayed side acted in the same way as the other tests, while the unsprayed kept green and thrifty, making a fair growth both in fruit and foliage after the other was entirely bare. The fruit on the plum trees was destroyed as well as the foliage. It began about the fourth application of the green, and continued till not a leaf was left, while a large portion of the fruit was stung and destroyed before the leaves died away. To nearly 300 apple trees I only gave one application; on these I could see no benefit whatever, as those not sprayed were as free and sound as those of the one application. One of my acquaintances had several fine plum trees, heavily laden with fruit; part he sprayed in 1883, having a fine crop of fruit; last year every tree so used was dead. My opinion, so far, in respect to using the green, is that it must be done very carefully, as a little too much may cause the loss of the trees as well as the fruit. I hope some of your readers will test the use of the green this coming season carefully, till we can ascertain just the strength required to be successful, and not destroy the trees. One teaspoonful to four pails of water is as strong as I would risk on my trees for the present, and stop then at the third application. On pears I could see no benefit or harm from it.

Yours very truly,

JOHN P. WILLIAMS.

Bloomfield, April 6th, 1885.

PIMPERNELL.

(To an English seed evidently found in the garden.)

Sweet souvenir of my early days—
Those days remembered well—
How I loved your smiling face,
Starry little Pimpernell.

Where now are those with whom I watched
Your petals close in tiny bells?
Oh! they are scattered far and wide
Beyond the ocean's heaving swells.

Some have in distant lands been raised
To honor and to fame,
And will upon the page of Time
Leave long inscribed their name.

Others are sleeping their last sleep
In the dear land I love—
Are waiting now in trustful hope
The summons from above.

What is it that's around us thrown,
A charm or fairy spell,
That even now on childhood's days
Our memory loves to dwell?

Our hearts then full of buoyant hope
And free from anxious care,
One heaven was in the present then,
The future had no fear.

Could roam at will o'er hill and dale
With bursts of childish glee—
Could watch the minnow in the brook,
The wild bird and the bee.

Oh! I do not curb with hand severe
All childhood's little ways,
The world has yet of grief in store,
These are their halcyon days.

Owen Sound.

M. W. M.

A REMEDY FOR PHYLLOXERA.

(From the Clerk's Journal, English paper.)

As the result of a number of experiments which have been conducted by Professor Barr, of San Francisco, it is stated that a sure cure for Phylloxera had been found in quicksilver. The remedy is, according to a report by this professor, just issued, $\frac{1}{2}$ oz. of quicksilver, thoroughly mixed with an equal weight of clay, in the soil of the hole in which the vine is planted.

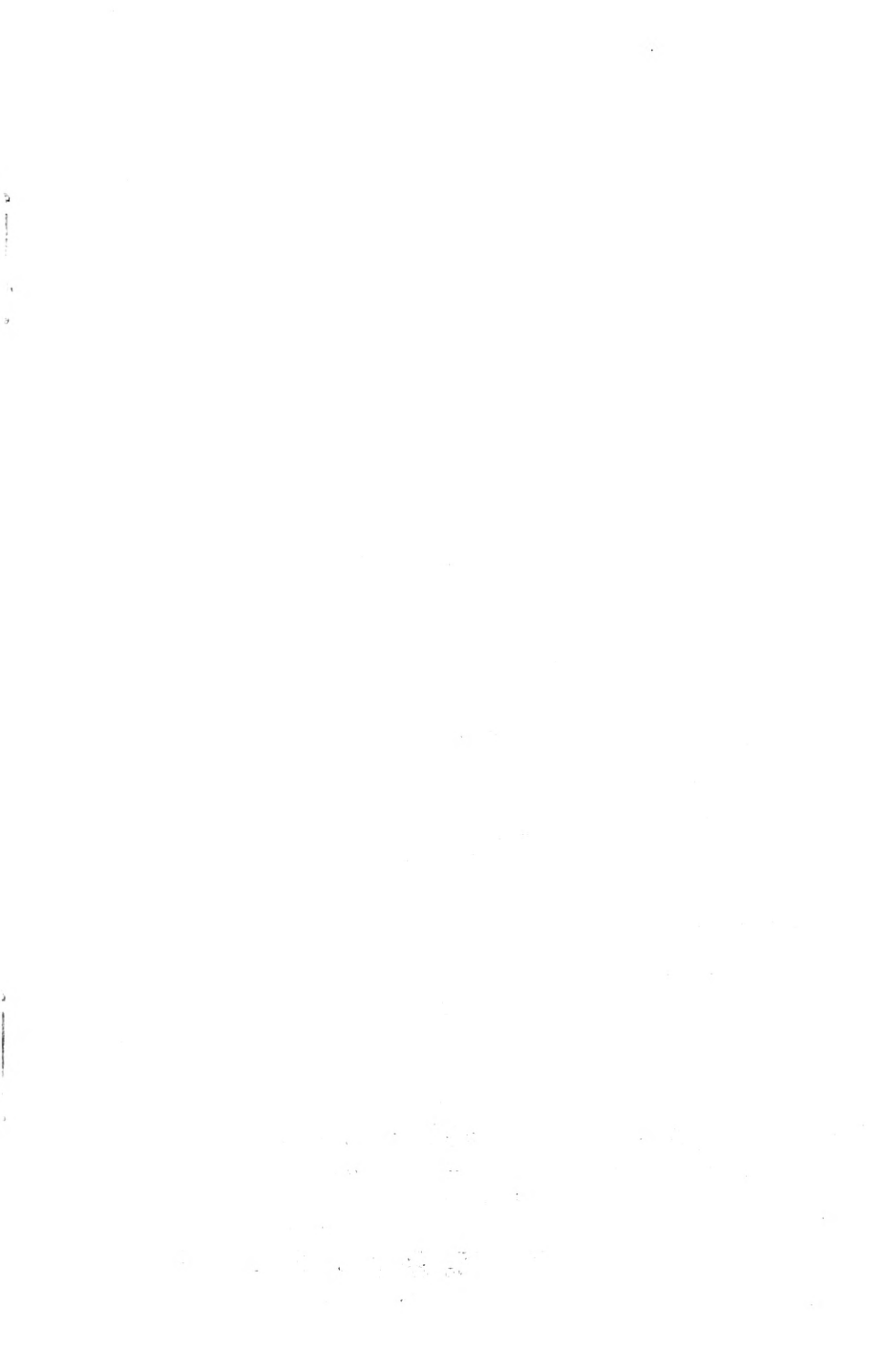
The cost of the mercury was, at the time of the experiment, only $\frac{1}{2}$ d. per vine, or as the vineyards are planted in California, from £1 8s. to £2 per acre. The suggestion as to the use of mercury came from the fact that a small globule of that metal in a case of mounted butterflies will protect them against

the depredations of beetles, and also to the fact that mercurial treatment is destructive to insects. The report expresses the belief that a dose of the mixture will protect a vine for at least 20 years. It appears that from many experiments made and reported on, the efficiency of the quicksilver remedy has been determined. Other trials are also being made.

THE ILLUSTRATED WAR NEWS.

The Grip Printing and Publishing Company, of Toronto, issued last week No. 4 of their fine illustrated newspaper, descriptive of events connected with the rebellion in the North-West. Each successive issue of this paper eclipses its predecessors, and we are pleased to observe that the publishers are meeting with the success which their efforts deserve. No. 4 contains the following illustrations:—Lord Melgund's Scouts surrounding three of White Cap's Warriors; The Winnipeg Light Infantry (91st Battalion) preparing for service; White Cap, the Sioux Chief; Trial Practice with the Gatling at Swift Current; Col. Otter's Brigade approaching the South Saskatchewan; The Nova Scotia Provisional Battalion at Montreal; Steamers at Medicine Hat loading Ammunition and Stores; Reading Battalion Orders in the Drill Shed, Hamilton; The Midland (Col. Williams') Battalion marching to the C. P. R. Depot, Winnipeg; Portraits of Officers at the Front, including Col. Quimet, M.P.

No. 5, which was issued on the 2nd May, was an intensely interesting number, containing, in addition to other fine illustrations, sketches representing the Relief of Battleford, and the Battle at Fish Creek. The price of the paper is fifteen cents per copy, and it can be procured either from the publishers or from local news-dealers.





WHITE FRINGE.

PAINTED FOR THE CANADIAN HORTICULTURIST

THE Canadian Horticulturist.

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[No. 7.]

THE CHIONANTHUS, WHITE FRINGE.

Our more practical German cultivators have given this beautiful shrub the very expressive and somewhat poetical name of *Schneeflocken baum*. Nothing could be more appropriate, and we suggest that this German name translated into our mother tongue be henceforth adopted as the common name, and that we call it the Snowflake Tree. The name given to it by botanists is much the same, being composed of two Greek words, *χιον*, snow, and *αθος*, flower, because of the snowy lightness and whiteness of its singular flowers.

The general appearance of the leaves and flowers is very well represented in our colored plate. The leaves are large, glossy, and of a dark green, contrasting finely with the light, airy, snow-white flowers, which are distributed among them in drooping racemes. It is perfectly hardy in the County of Lincoln, and judging from its behaviour there should be capable of enduring the climate much further north. It would seem that it has not been very frequently planted in Ontario, as it is seldom met with among the collections of shrubs on our lawns or public grounds. So beautiful and interesting a tree deserves more general trial, and we have ob-

tained this colored illustration for the purpose of calling the attention of Canadian planters to this superb little lawn tree.

It has been the fashion to plant foreign trees and shrubs to the neglect of those that are American, but the lover of the beautiful will readily avail himself of those plants that are native to the soil, and in so doing, provide a collection more rare and more ornamental than if composed only of exotics. This shrub is a native of North America, and is found growing wild in Pennsylvania and southward. It belongs to the Olive family, and hence bears relationship to shrubs and trees with which we have all been familiar from childhood. The well-known Lilac and Privet are members of the same tribe, while our White, Black and Green Ash, belong to another tribe of the same family. European cultivators have availed themselves of this consanguinity to propagate our shrub by grafting it upon their common Ash, *Fraxinus excelsior*. Besides our American species, there is another native to the East Indies, which can only be grown in a hot house, requiring what is known among gardeners as stove heat. And yet another was in-

troduced into England from China, in 1852. But we have no occasion to go after these foreign species. The one native to this Continent is best suited to our circumstances, and in point of beauty is all that can be desired.

If any of our readers have planted this shrub, we wish they would communicate their experience with it for the information of others, especially with reference to its hardiness and the soil in which they find it to thrive.

EASY LESSONS IN BOTANY.

By H. B. SPOTTON, BARRIE.

LESSON III.

Our examination of the Buttercup blossom has made us acquainted with the various parts of the flower. In this particular blossom these parts are all separately attached to the receptacle, and the receptacle is simply the swollen top of the stem of the plant. Lower down on the stem we found *leaves* produced at intervals, and it is time now to state that all the pieces of which the flowers is made up *are leaves also*. This view of the matter has probably not occurred to you, because the flowers are so strikingly different in appearance from the rest of the plant. But let us see. First, there is the fact that the flowers are produced on the stem and its offshoots; this alone is suggestive of the notion that their parts must be leaves of some kind. Then if we examine a sepal we find it to be flat and thin and usually green, just like a common leaf, but of course much smaller. The petals are also like small leaves, but here we miss the green color; corollas are almost invariably of some color other than green, and we shall presently try to discover why this is so. You will be disposed to admit then, on reflection, that at any rate sepals and

petals are only modified forms of common leaves. But what shall we say of stamens? Can it be possible that these organs have anything of the leaf-nature about them? It may seem at first a hopeless task to try to trace any resemblance. But if you take any common leaf—say that of a lilac—you will see that the blade is equally divided by a rib which extends from the end of the petiole to the tip of the leaf. The anther of the stamen is divided in the same way by the connective; and the filament very fairly represents the petiole. The greatest difference is in the body of the leaf, as there is apparently nothing in an ordinary leaf-blade like the grains of pollen which are produced in the anther. As to the carpels, if you take the blade of a lilac leaf and double it lengthwise, you will have a very fair representation, on a large scale, of the carpel of the Buttercup, and it is exactly by such a folding process that the botanist conceives the carpel to have been formed. Let us, then, understand that all the parts of the flower are merely modified leaves. The crowding together of these parts in whorls is due to the same cause as the crowding of the leaves of the Dandelion, namely, the suppression of the growth of the stem at the place where the leaves are produced. The ordinary green leaves of the plant we shall call *foliage leaves*; those of the flower will be known as *floral leaves*.

Having settled the question of the true nature of the floral whorls, let us now examine a flower of Hepatica. Here we have at the outside a whorl of three little green leaves, which you will be pretty certain to regard as a calyx. But if you carefully turn back these leaves you will discover that *they do not belong to the flower at all*, being separated from the colored whorl next within by a short bit of stem. They are, in fact, three small foliage-leaves.

To such small leaves, which are very common on the peduncles of flower-clusters, the name *bract* is given, and if the bracts form a whorl of three or more, the whole is generally called an *involucre*. There is, then, no green calyx in *Hepatica*. But we have the whorl of colored leaves corresponding to the petals of the Buttercup. The question then arises—shall we call these colored leaves sepals or petals? As they are the *outer* leaves of the flowers, that would be a reason for calling them sepals, but they are certainly more like ordinary petals than sepals. However, botanists agree to be guided by the first consideration, and call them sepals, and they agree to look upon the *Hepatica* and all such flowers as have only one of the two outer whorls as being *without a corolla*. This being understood there is no further trouble in the examination of this flower. The colored calyx will be found to be polysepalous; the stamens are numerous and separate (polyandrous); the carpels are numerous and separate, the pistil being therefore apocarpous; and each carpel contains one ovule, just as in Buttercup. Note, also, that in this flower, as in the Buttercup, all the parts are attached directly to the receptacle.

The Wallflower blossom may next be examined. Here we have no difficulty in finding the calyx, but there are only four sepals. The corolla consists of four petals. The stamens are six in number, and you will readily discover that two of them are different in length from the other four. The pistil is all in one piece, but if you select an enlarged one from a withered flower, and cut it across with a sharp knife, you will see that it consists of *two cells*. We have, in fact, in this pistil two carpels grown together, a state of things quite unlike what we found in Buttercup and *Hepatica*, where the carpels were all separate. We shall often find instances

of this growing together, or *cohesion*, as it is called, of the parts of floral whorls, sometimes sepals cohering, sometimes petals, and sometimes stamens. We shall even find the parts of one whorl growing upon another whorl, such as the petals growing on the calyx, or the stamens growing on the corolla. To distinguish this union of different whorls from the union of parts of the same whorl, we shall speak of the former as *adhesion*, reserving the term *cohesion* exclusively for the latter.

You will not fail to notice that the two cells of the ovary in Wallflower contain a considerable number of seeds.

It will be a good plan for you, after studying the Wallflower blossom, to compare its structure with that of Water-Cress, or Shepherd's Purse, or the common yellow Mustard of the fields. In all these cases you will find so evident a similarity in the form of the flower that you will be prepared to hear that they all belong to the same natural group of plants.

We shall now examine the flower of *Geranium*, reserving the Dandelion for another occasion. The calyx is of five sepals, as in Buttercup. The corolla, also, is of five separate petals, these being alternate with the sepals. The stamens have peculiarities not observed in the other specimens. First notice that the filaments cohere to form a tube at the base. They are in consequence said to be *monadelphous*, that is, of *one brotherhood*. Then you will observe that there are ten of these filaments, every other one being shorter, so that we have two sets of five each. It is not likely that you will find anthers on all ten of the stamens; perhaps only on six or seven. The pistil is made up of five united carpels (*syncarpous*), and there are clearly five stigmas. These unite below into a slender column above the ovary; this column is known as the *style*.

If you have attentively followed the descriptions of flowers in this and the preceding lessons, you will have gained some useful information as to the parts of which flowers are composed, and also some little notion of the *sorts of variation* which flowers present in their structure. At present this is all that can be expected from the beginner.

TO OUR CORRESPONDENTS.

It has been found necessary, in order to ensure the prompt mailing of the *Canadian Horticulturist* so that it shall reach our readers by the first day of the month, to have the copy in the printers' hands not later than the first day of the previous month. Please, therefore, to bear this in mind, and mail your communications in season to reach me by the first day of the month preceding the month of publication of the number in which you wish to have your paper appear.

FORESTRY IN QUEBEC.

We are indebted to Mr. C. Gibb, of Abbotsford, Que.—the man to whom that Province owes a debt of gratitude for his indefatigable labors in the cause of fruit-growing in that climate—for a report of the recent meeting of the Forestry Association of Quebec. It was well attended by gentlemen of influence and members of Government, among these, the Honorable the Commissioner of Crown Lands, who took a lively interest in the proceedings, and was evidently fully alive to the importance of husbanding the resources of the Province which lie in its forests, both by conserving what yet remains and by re-foresting denuded portions not suited to agricultural purposes.

This matter of forest management is one of great importance to both Ontario and Quebec. Properly managed, our forests would be a source of perpetual

revenue. The ripe timber could be cut and sold while the remainder is coming to maturity, and that in such a way that there would be a yearly crop. There should be in each Province an Assistant - Commissioner of Crown Lands, thoroughly informed on all matters pertaining to forestry, whose tenure of office should be according to the ability displayed in managing the forests in such a way as to make them a continual source of revenue. Under our system of government, the Honorable the Commissioner may be wholly ignorant of forestry matters, and yet a valuable member of the government. Besides this, the Commissioner is frequently changed, hence the methods of caring for our forests lack the element of stability. It is well that public attention is being aroused to this very important matter.

THE CANADIAN BEE JOURNAL.

The first number of this new venture is before us. It is the only journal devoted to this subject published in Canada. Published weekly by D. A. Jones & Co., Beeton, Ont., at \$1.00 a year. A sample copy will be forwarded by the publishers to any who may desire to receive one. We commend it to the attention of those of our readers who are interested in bee culture.

THE KIEFER PEAR.—Geo. W. Campbell says he finds the Kieffer as badly injured by the cold of winter and as liable to blight as any pear he has. He thinks it about as tender as the peach, and not so hardy as the Bartlett pear. We have found it hardy, but it blighted the first year after making a good growth. After successive years of fruiting we do not find it good enough to make it worth raising as far north as 42°, but tolerably good and handsome specimens have grown as far south as Philadelphia.—*Country Gentleman*.

QUESTION DRAWER.

1. What can I do for bark-lice on my trees; can you give me some remedy? I have tried whitewash, but I don't think it has any effect.

2. How can I protect my gooseberry and currant-bushes from being destroyed with snow, for they are badly broken down this spring?

3. Is salt good to put around the trees; if so how much to a tree, that is around the trees?

4. What can we do in the case of humbug tree agents travelling about the country imposing on people, selling trees at an enormous cost for their extra qualities, yet I will venture to say that there is not one in ten that has been planted in this neighbourhood that has lived, which I know had the very best of care?

Yours very truly.

A. C. McDONALD.

Dunlop P. O., Huron Co., Ont.

REPLY.—1. Dissolve one pound of potash in two gallons of water. Apply with a brush or swab to the bark of the trunk and larger branches. This is sure death to the bark-louse and all insects and their eggs which are found in the crevices and under the scales of the bark.

2. Will some of our readers who have had experience in this matter please to reply to this question. We are so seldom troubled in this way in the County of Lincoln that we are unable to speak confidently of any method. It occurs to us that if the first snows were firmly trampled about the plants until a hard bed was made about them as high as the branches, the melting would be so gradual that the branches

would not be torn off by the settling of the snow.

3. Salt is thought to be of benefit to plum and quince trees, but not to any other fruit trees. The quantity must be graduated to the size of the tree, from a quart to a peck scattered on the surface.

4. Not all tree agents are humbugs. The fact that the trees did not live is no evidence that the man who sold them was to blame. Many, if not all, of our most reliable Canadian nurseries have agents who take orders travelling through the country. These men can always show you letters of recent date from their employers, and if you find anything unsatisfactory write to the proprietor of the nursery the agent claims to represent, and you will find that every reasonable complaint will receive prompt attention.

GOLDSMITH BEETLE.

I send to you at same time as this note two beetles I dug up last week. Will you please name them. Say whether injurious or not, and if scarce, in *Horticulturist* next month, if you think it is worth the space to do so.

Yours respectfully,

FRANK JONES.

Hamilton, April 27th, 1885.

REPLY BY WM. SAUNDERS.—The beetles referred to by our correspondent are specimens of the goldsmith beetle (*Cotulpa lanigera*), a very handsome insect, nearly an inch long, with the wing-cases of a rich yellow color, while the thorax and head gleam with burnished gold of a brilliant reddish hue. They

attack and devour the leaves of the pear, cherry, and other trees, just as they are expanding, and thus materially retard the growth which would otherwise take place. In the larval state they closely resemble the common "white grub," and are equally injurious, feeding on the tender succulent roots of plants, especially strawberries. This insect, however, is seldom met with in any great abundance, and on this account is not generally known as injurious.

BARK LICE.

Mr. W. A. Webster, of Stoney Creek, sends us some specimens of bark lice attached to a thin slice of bark, and asks, "What are they?" "Do they injure the trees?" "What remedy is best for them?"

They are what is known as the oyster-shell bark louse (*Mytilaspis pomorum*), which is, unfortunately, too common on apple trees throughout Ontario. Under each of these scales is a mass of eggs varying in number from twenty to a hundred, or more, which hatch late in May or early in June, producing small lice about one hundredth of an inch long, which are at first very active, running all over the tender twigs of the tree, seeking suitable locations to which to attach themselves. Having made their selection they insert their tiny sharp beaks and remain motionless, subsisting upon the sap of the tree. They gradually lose their limbs, and secrete over themselves a scaly covering, which is enlarged with the growth of the insect, until it presents the mature form as in the samples sent.

These lice are very injurious. They occur in great numbers, and seriously weaken, and sometimes destroy the trees invaded.

Remedies.—During the winter or early in spring the scales may be scraped off, or removed with a stiff scrubbing brush, dipped in a strong solution of soap. The young lice may be destroyed by brushing the twigs with a strong solution of soap in water, made about the consistence of thin paint.

ICHNEUMON COCOONS.

Another correspondent sends a cluster of white egg-shaped bodies, each about an eighth of an inch long, attached to a piece of bark, and enquires, "What are these eggs?" These are not eggs, but small cocoons of a species of Ichneumon fly, a class of insects including some of the fruit growers' best friends. Each of these small cocoons produces a minute, but very active fly, which deposits its eggs in the body of some caterpillar, where the young grubs hatched from them feed upon the body of the victim selected and destroy it. Do not injure or kill any of this useful class of insects.

MR. EDITOR,—Please set us right in our doubts:—

First—Is it not the best and surest way, in the cultivation of the strawberry, to root out all that are not showing bloom in the first spring of planting, for fear they should be barren plants, and their runners be in time mixed with those that are fertile or fruitful?

Secondly—It is said the Cap Raspberries are only propagated from the tips. I think they can be propagated,

like the vine, by laying the cane in a shallow drill, and as they shoot up, to fill in the drill with earth, and thereby get a quantity in a short time. Am I correct in this?

Thirdly—Give your opinion as to the following. I have my doubts in trying the receipt because of the tar. The *Globe* has the following from the *Rural World*; it says:—"A writer last spring stated that a mixture of tar and soft soap and sulphur would keep the borer out of apple and peach trees. I have used it for thirty years, and it has never failed if done in April or May. It will also keep rabbits and mice from gnawing the bark. Paint them with a swab or brush; do it the first warm day; do not wait. *Receipt*—Take two-thirds soft soap and one-third pine-tree tar; put in water enough to make it like thick paint; add one pound flour of sulphur to the gallon; boil it all together; when still warm, use it." Before I apply such, I ask your opinion. I was doubtful as to whether the tar would not do more harm than good.

H.

REPLY.—1. Will some of our strawberry growers please state their experience on this point?

2. We have never tried to propagate them in this way. Will you please try it and tell us whether you succeed?

3. We think pine-tree tar would do no harm if pure, but so much of the tar in market is adulterated with injurious substances that we should fear to use them on trees?

GRAPE MILDEW.—Prof. G. C. Caldwell, of Cornell University, says that where the stakes to which vines are tied are soaked in a solution of sulphate of copper, the vines are not attacked by mildew. The soaked stakes exert an influence for a distance of two and a half feet on either side. It is believed that a single soaking will suffice for three or more years.

WHAT THE PEOPLE SAY.

HORTICULTURAL NOTES OF A SOUTHERN TRIP.

BY WILLIAM SAUNDERS, LONDON.

(Continued from page 127.)

In the display of tropical fruits at the New Orleans Exposition Florida took the lead, California ranking next. The exhibit of oranges was perplexing in its variety, and to a novice it seemed difficult to understand how so many varieties so nearly alike could be distinguished. The Mandarin and Tangerine oranges are easily separated from the ordinary sorts by their small size and characteristic appearance, and the Maltese Blood by the red staining on the inside, but the Dummitt, Hart's Seedling, Mediterranean Sweet, St. Michael's, and a number of other named sorts so closely resemble each other that to the uninitiated they seem identical. In addition to the oranges, which formed the bulk of the display, there were a number of varieties of lemon; also shaddocks, guavas, citrons, grape fruit, limes, Japanese persimmons, loquats or Japanese plums, sapodillas, and pomegranates.

While in New Orleans the opportunity was afforded to visit the green-houses and grounds of Prof. Richardson, where, under the guidance of his enthusiastic gardener, Mr. Lester, we were shown some rare and beautiful plants. Among others in bloom there were quite a number of orchids. Three specimens of *cattleya trianae* attracted special attention, with their richly-lined flowers, measuring nearly five inches across. The houses were well kept. On the grounds were a number of beautiful palms, pittosporums, and other evergreens. A splendid plant of the Marechal Niel Rose was trained to cover a shed; it had grown very vigorously, and was just pushing out its buds.

full of promise for bloom. It seemed much at home, and perfectly hardy.

Many of the gardens in the better portions of the city were very pretty. Occasionally beautiful dwarf growing magnolias could be seen in bloom, with their large and handsome flowers of various tints. These are of foreign introduction; the native species bloom later. Scarlet honeysuckles, violets, and laurustinus were also in bloom. *Rhynchospermum jasmuinoides*, which in Canada we grow with much satisfaction in pots in greenhouse, here flourishes as a common climber, and grows with as much luxuriance as our five-leaved ivy does with us.

Leaving New Orleans, a charming day was spent in Mobile. Accompanied by Dr. Chas. Mohr, the well-known botanist, we took a delightful afternoon drive along the shores of the bay, admiring the scenery, inhaling the balmy air from the Gulf, and gathering interesting plants. At Magnolia Grove there were a large number of trees of magnolia grandiflora, including the finest specimens seen anywhere in the South. A leading industry here is the growing of cabbages, a large quantity being raised for the Northern markets. The seed is sown in August, and the plants continue to grow all through the winter (so-called), and mature at different periods from January onward.

Twenty hours of railway ride brought us to Jacksonville, Florida. Here the season was much further advanced; the roses were in full bloom, and were much admired. Some of the gardens were very beautiful, and included quite a number of varieties of flowers, while many others were less cared for. Where so much that is beautiful lies within reach of every one, it seems strange that more is not attempted. A very pleasant visit was paid to the beautiful home of Mrs. Mitchell, across the river; also to that of Mr. Thomas Bassnett,

where we were most hospitably received, and at both places saw a large number of orange and lemon trees well laden with their golden fruit. Proceeding up the river, we found flowers more extensively cultivated in St. Augustine, especially roses, which are in such demand by the guests at the hotels that they are gathered and sold as fast as the buds form. This branch of horticulture must be quite remunerative here, as good prices are obtained. It was now the middle of March; the weather was warm and most delightfully pleasant. It seemed difficult to realize that the friends at home were experiencing heavy snow-storms and a temperature much below zero.

Proceeding south, brief visits were paid to Pilatka, Silver Springs, Ocala, Leesburgh, Eustis, Enterprise, Orlando, Kissimmee, and Tampa, the extremity of railway travel, passing through all the most productive orange sections, where in many places orange groves are so plentiful as to be a drug in the market. The country, however, is being rapidly settled. Along the line of the South Florida Railway from Sanford to Tampa, a distance of 115 miles, there are quite a number of thriving places. The railway was opened but a year ago, but within that time towns with from 300 to 500 inhabitants have sprung up at different points along the line. At Tampa the sun was uncomfortably hot during the middle of the day, but the weather cool and pleasant at other times. Here we enjoyed ripe strawberries, gathered fresh from the gardens adjoining. The variety in cultivation resembled Wilson in form, but was sweeter. It was said to be a seedling of Wilson which originated somewhere in the South, and endures the dry, hot weather of summer better than our Northern sorts. What surprised me most, when examining these strawberry beds, was the entire absence of runners.

The plants were of fair size and bushy, and had been fruiting steadily since the beginning of January, but I was unable to find a single runner anywhere. On enquiry, I was told that strawberry plants do not put out runners in that climate until May or June, that the fruiting season lasts about five months, beginning with January, and that towards the close of this period the plants produce runners in great abundance.

On the return journey, short visits were paid to Savannah and Charleston, where we greatly admired the magnificent camelias and azuleas blooming out of doors. Before reaching Washington snow was encountered again, with unpleasantly cold winds; and we found winter still reigning on our return home.

HOME MADE WINES.

As many of your readers may not know how easily they can procure a cheap and wholesome wine, with a good body—nay, in spite of the Scott Act, home-made wines like these will harm no one—the following will make a good wine from either black currants or bilberries, or as some call them, huckleberries: To every gallon of fruit put 1 gallon water (soft water is best); let it stand in a tub a week or nine days, stirring it daily, and keep covered with a cloth; then strain it through a cloth, and to every gallon of liquor thus procured, add 3 lbs. sugar; mix well, and fill up your cask. No boiling is here required. If you are making wine from the bilberries or hearts, as some call them in the old country, add a few cloves; but not to the currants—it is said black currants have medical properties.

The huckleberry or bilberry (*Vaccinium myrtillus*) grows plentifully in Surrey, in England, and never sells for less than three half-crowns per bushel,

wholesale; they are gathered by the poor country folks on the waste lands for the markets.

T. A. H.

Medora, Muskoka.

THE ROSE AND THE GERANIUM.

We were greatly delighted with the valuable paper, in the April number, from the pen of Mr. Mitchell, of Innerkip, on "Certain Roses."

Your very flowery correspondent had almost led us away from our honest convictions long entertained, and simply by the bare force of his masterly description. With all due and becoming respect for the Rose and its proud position in our horticulture, we must beg leave to conscientiously demur from the common belief of its pre-eminence among popular favorite flowers for the masses. We may say further that we have scarcely ever known but one or two successful Rose growers in our limited observation. In the winter of 1882-3, while on a temporary visit to the city of Rochester, N.Y., we were kindly introduced to the magnificent Rose-houses of Ellwanger & Barry, and also those of the late lamented H. E. Hooker, Esq. In these grand houses and under these fine conditions we saw the rose in all its grandeur, beauty and variety in successful cultivation, and on the largest scale. Such a profusion of attractive and beautiful Rose plants in all stages of growth, we had never seen before, and were astonished beyond measure. Could we have been possibly guilty of so gormandizing a covetousness in one individual, we could have vainly desired the possession of the whole lot in our collection. But then the conditions, ah! there's the point! Large and thoroughly adapted houses, thoroughly equipped with benches and modern appendages, and the conditions of heat and moisture, gaged exactly to suit the Rose, and the whole under the

direction of the efficient life experience of such a man as Mr. Hooker, or the more noted Mr. Ellwanger, both practical men, this powerful force being brought to bear at once on the result, it was indeed a grand consummation in Rose production. Who among us could do this and proudly show such practical results? While much that is cheering has been done in growing of Roses by such devoted lovers of the plant as our friend Mitchell shows himself to be; we are happy to know that there is a popular plant that comes nearer the popular grasp, and may well be denominated the poor man's flower, or everybody's flower. This proud pre-eminence we would humbly claim for the

GERANIUM.

We humbly consider that the world is more indebted to this humble, unpretending and unroyal plant for its tastes and refinements and embellishment than to any other one family in the long list of modern catalogues. Where there is one successful Rose-grower, those of the Geranium can be numbered by hundreds. Almost every family in the land can daily look upon at least one to a half dozen beautiful Geranium plants on their humble shelf, or their more cramped and scanty window sill. They watch the beautiful leaves expand in the light, and the tender bud clusters of promise, and the opening mass of brilliants equal to any rose with the greatest delight; and *mother* is the gardener. Only think, and try to take in, if you can, the aggregate educating influence of this one plant on the masses of Christendom? Is it not past our feeble efforts at calculation? Where is the Rose in its every-day influence beside the Geranium? Our powers of description, so unlike those of your correspondent, fail us to do anything like justice to any one member of this interesting family

of popular plants. We can only attempt an enumeration of a few of the most desirable in the several classes. And here it is well for us to remember that, as in the case of Roses, so in the case of Geraniums, we are ever indebted to the practical, skilled growers of England and the Continent for the newest and best strains. In Roses there is annually imported the latest and newest strains and variations of such noted growers as the Bennetts, W. Paul & Son, Turner and others. In Geraniums, the latest and most admirable strains (and they are to be wondered at) come from the houses of H. Cannell & Sons, and others. These importations are constantly adding to our floral treasures. Some of the best of the single flowering Geraniums are: Jealousy, Dr. Denny, Jennie Dodds, Col. Holden, Samuel Plimsol, Mrs. Whiteley, Bishop Simpson, and several others newly brought out and beautiful specimens worthy of our admiration.

The Double Geraniums:—Bataelan, Dr. Phinney, Bishop Wood, Henry Cannell, James Vick, Queen Victoria, Mrs. Charles Pease, Mrs. Hay, &c.

Although the flowers of the Geranium are not sweetly scented like the Rose, yet it has a rich and varied inheritance of sweet scent stored in its beautiful leaves. The most noted scents are Apple, Penny Royal, Lemon, Peppermint, Almond, Rose, Balm, Nutmeg, Citron, and several others distinctly marked.

In Foliage Geraniums, the fine Bronze varieties are perfectly handsome. Also the Cloth of Gold, and the more wonderful Happy Thought. Then the Silver Bicolors, as the Mount of Snow, and the beautiful Silver Queen, and Cannell's Freak of Nature, &c.

The Golden and Silver Tricolors are perhaps the most wonderful of all, and always command our admiration. The Ivy-Leaved section is also truly remark-

able. But I feel I have outstripped my limits and shall succeed only in wearying you. Yours truly,

B. GOTT.

Arkona Nurseries, April 10, 1885.

PETER PRUNING KNIFE PRUNED.

MR. EDITOR,—In reply to part of an article published in the May number of the *Horticulturist*, headed: "Mistakes of Fruit Growers, by Peter Pruning Knife," namely, mistake No. 3, I wish to say I am agent for a nursery, and in all the sales of fruit trees that I have made I always recommend trees that are likely to stand the test of our severe winters; in fact trees that I have proof have grown in the coldest localities of the United States. Very true I have a beautiful colored plate, at the same time I do not recommend the names on the plate without I am certain they will stand the cold climate or the soil. For instance, hard-pan soils will not grow fruit trees; loamy soil will if it is not too light; in fact trees will grow in very light soil if they are well watched. I have fruit trees growing in limestone gravel and doing well. Why? Because I feed and water them when required. Why cannot others do the same? The fault is often with the buyer. For instance, I offer a man a list of hardy trees; the price is too high. Buyer says can't you let me have trees for less money? Agent sells a cheap tree. The result is they will not overcome the cold winters without injury more or less. Who is to blame, the agent or the buyer? Some purchasers will have a first-class article, cost what it will, because they want a tree that will carry itself through our trying winters without risk.

The article I refer to in the *Horticulturist* says one-half or more of the

trees that have been thus recommended and planted in the Northern parts of this country have proved worse than useless. Why are they useless? Because it is the purchaser's fault who will not be advised and pay for a first-class article; the consequence is the trees fail and the agent and nursery have to suffer.

The article I have reference to has pinched my corns. The writer of Peter Pruning Knife should think before coming down on fruit tree agents. Some people do not think for one moment that it costs time and money searching and testing the different varieties adapted for the different climates.

Mr. Editor, as I am a subscriber to your valuable *Canadian Horticulturist* I hope you will give the above article space in its columns.

JAS. DOUGAL, SEN.

Barrie, May 5th, 1885.

NOTE BY THE EDITOR.—Our correspondent seems to have failed to notice that "Peter Pruning Knife" speaks of the mistake made in ordering trees from agents *about whom the buyer knows nothing*. Every buyer should satisfy himself that the person to whom he gives his order is in fact an agent of the nursery he pretends to represent. If he cannot show very recent letters from his employers he is not worthy of belief. In selecting varieties he need not be guided merely by the agent. The catalogues of our Canadian nurseries will give very full information as to the adaptation of varieties to the climate, and if he represents a Canadian nursery he will be able to inform the purchaser by showing him the catalogue.

GRAFTS AND GRAFTING.

MR. EDITOR,—The premium grafts came duly to hand of one yearling Russian, or Cossack, apple. I cannot tell whether they are true to name; if they are, and the fruit is as long as the name, we shall want a corn basket and wheelbarrow to get each one to the cellar; neither can I tell what quality they may prove to be, as I have no dictionary large enough to pronounce a word so long, or give any derivation or root to even guess at its meaning. However, as it is time to top graft, I avail myself of the privilege. I cut off close to the little root, and save one bud to make my tree, cut up my wood in pieces of three buds each, and set nine limbs in an old tree that was called Powell's Beauty, which, in due time, will prove what the quality is like. As I have had much experience in grafting, having practised it for over forty years, I still have a strong desire to continue testing new varieties as they come along; which in this age of the world are making rapid strides. Our collections are getting large, and the most cultivated fruit grower is almost at a loss at times to determine what to plant.

I need not speak of the method of inserting grafts, as there has been so much written in books, journals, and horticulturists, that the few hints I may offer might not be of any farther service. I think the way the grafts are located in limbs has much to do with insuring a good result.

May I here say it is a law of nature that all overtopped limbs (no matter how close or high above ground) shut in from the sun, *invariably die*; and without securing the uppermost limbs of the tree to insert scions, such as have plenty of sunlight without having large and healthy limbs still over them, to rob your scions of their food, as the sap or food of the tree *rises* more vigorous

and in greater supply to the *highest growth of the tree*.

Grafting one limb under another is of but little worth. My rule is not to cut a limb over two inches in diameter, keep well out, one inch to one and a half inches is the best size, the wound will sooner heal; the limb will then give with the weight of fruit, and not break off so easily. I have inserted three hundred scions in one tree, some twenty to twenty-five feet above ground, and in three years had a full top with quite a crop of fruit. In later years some of the grafted limbs had to be taken away, as I set thickly and cut away the remaining portions of old wood piecemeal, so as not to check the growth too quickly; as the after care of the scions is by far the most important to preserve branches enough to take up the flowing sap, and not undermine the constitution of your tree, but keep it healthy and vigorous. When you have inserted grafts sufficient for an entire top, the original branches will receive a tremendous impetus to grow. The grafted stock will sprout profusely and soon choke out the scions and stop their growth, too much cutting and pruning them will injure the tree, often to cut or head back branches without removing entirely, leaving the leaves on the branches, not covering up the scions. They need looking after through the months of July, August and September.

The following spring cut back to eight or ten inches, and at intervals through the summer arrange your limbs for bearing by not allowing them to grow too thickly together, and removing part of old wood were not needed; second year, head back again, and remove all old remaining wood from the tree.

As to the varieties for top grafting, I would not take a slow growing

variety ; the stronger the better, such as King of Tompkins County, Golden Russet, Northern Spy, Wealthy, Red Astrachan, St. Lawrence, Fallawater, Colvert, and Twenty-Ounce apples, etc. The Baldwin, Greening, E. Spitzenburg, Hubbardston's Nonsuch, Gravenstein ; these varieties are generally injured when as cold a winter as the past one follows after grafting, and are often lost. You can sometimes save the tree by letting the stock sprout out again, and re-graft another year. There is still another class of hardy fruit, but very difficult to work successfully, such as Pewaukee, Tetofsky, Mann, Grime's Golden, Fill Basket, and Beauty of Kent ; these do not unite well with the stock of older trees, and have proved worthless. Location has much to do with this, as in some favored sections these same varieties do fairly, and are valued somewhat, but to a very large extent where it is as cold as with me persons should use the hardy and well tried sorts. I think our Society should be very careful indeed, and not send out any fruits that are not worthy of cultivation (as it is generally taken that if the Society send out fruit, it must be of the very best), and which may bring disappointment ; for instance, the Mann apple : I do not know on whose recommendation, or where its particular merit lies, or to what particular portion of the globe it best adapts itself. With me it has proved itself barren and worthless. I set seventy-five trees and top-grafted twenty more ; it does not succeed well as a top-grafted tree, being too slow in growth, and puny. Some of my top-grafted trees were large, fifteen feet across the limbs, and as high ; and, to speak safely, I have not grown one dozen specimens in the past five years, all told, of this variety. The Duchess, which is everywhere esteemed for its great productiveness and fine appearance, and good cooking

quality, works somewhat similar, but *worse*, for it does not unite and grow readily as a top graft ; appearing foreign in its nature, similar to the red and yellow Siberian crabs. I find it almost impossible to graft this variety to make a complete success of it ; the stock suckers so badly or sprouts out, and the grafts grow so slowly, they take up so small a portion of the sap, and to remove the sprouts continually appears to weaken the stock, and the whole finally becomes unhealthy, and dies away. There is no trouble to have the grafts live the first and second year : to cut too closely spoils your tree, and to leave original branches to consume the sap, robs the grafts that they soon die away. I have spoiled and cut down twenty-five healthy trees in trying to work the Duchess upon them, and have had very small success.

The only successful way is to whip-graft, or bud in small stock at the ground, or a little below, and let both stock and graft advance together ; this method has worked nicely. They are subject then to throw up very many sprouts from the stock and become like a large brush heap. To remedy this (if pasture is good), sheep can run among the trees and eat off all leaves as they form ; for they are very fond of apple leaves, using them in preference to the clover. Have used the sheep for years, without losing a tree by having the bark gnawed off. They and pigs run together admirably. Have made a practice for some time of breaking up the orchards, and seeding to oats and clover. As soon as the oats are high enough—say ten inches—turn the sheep into them, and feed off. Next summer the clover will give the feed, then break and seed as before ; but take no crop from the ground. The ground is kept in good condition : always soft and mellow.

Grapes and red raspberries have

come out very well after so cold a winter. The Philadelphia and Cuthbert are the best, while several other varieties are partially injured, but not so bad as to destroy their crop; while the black caps nearly all froze to the snow, as well as the Long, the Taylor, and the Snider blackberries; while the Vick and Wilson strawberries, mulched with leaves, with three to five feet of snow over them, are destroyed altogether, apparently smothered and heated.

I am, yours truly,

J. P. WILLIAMS.

Bloomfield, May 25th, 1885.

BLACKBERRIES—FOR THIS SECTION OF ONTARIO.

I have only found one blackberry that will pay to grow for market, that is the Snyder.

Wilson's Early, Kittatimny, Early Harvest, and Taylor's Prolific are all too tender.

Many catalogues give Taylor's Prolific the credit of being as hardy as the Snyder, but with me it is not as hardy as Kittatimny. I have had it growing for five years, and have never had a good crop of fruit from it yet.

Early Harvest was killed down to the ground last spring, and on examination I find that it is now killed down below the snow line.

Stone's Hardy has killed back a little more than Snyder, but it is yet too early to form anything like a true estimate of amount of injury done by the past winter, which has been the most severe of any within my recollection.

The ground was well covered with quite a depth of snow all winter, which has protected most all small fruits.

Plants will stand several degrees more cold when the earth is covered with even a light coating of snow, as the reflection of the sun's rays does not thaw out the plants so quickly as when the earth is bare.

Early Cluster has not had much of a test yet in Canada, but I think it quite promising.

Blackberries should have all cultivation discontinued in July, to give the plants time to fully ripen their wood.

They should be planted on high clay loam to give best results, and kept well pinched back. Yours, etc.,

W. W. HILBORN.

Arkona, April 9th.

REPORT ON FRUIT AT THE CENTRAL EXHIBITION, AT PORT HOPE, OCT. 7TH AND 8TH, 1884.

On arriving at the grounds, I found R. Dickson, Esq., Secretary of the Hope Society, and J. Foote, Esq., Secretary of the East Durham County Agricultural Society, who at once very kindly gave the necessary instructions for a careful examination of the fruit.

The exhibit of fruit was not as large or as good in quality as I had hope of finding in that noted fruit-growing locality.

I subjoin a list of fruits as found on the tables, together with such notes on the various exhibits as I then thought pertinent.

APPLES.

Fall Pippins—8 exhibits, six different kinds at least competing for this prize.

Northern Spy—8 exhibits. Most of them were of first quality.

R. I. Greening—8 exhibits. All very good samples, with one exception. The exception was not a R. I. Greening.

Russets (no variety specified)—4 exhibits. All very good. One lot was of unusual excellence, and ticketed "Extra. Recommended."

E. Spitzenburg—3 exhibits. The first prize lot was a fine sample. Those obtaining second prize were spotted.

Snow—6 exhibits. All first class samples and well judged.

Baldwin—6 exhibits. All good samples but the one getting second prize, which was not Baldwin.

St. Lawrence—3 exhibits. All very good. The first prize lot was unusually large.

Any Other Variety—12 exhibits, comprising some eight or nine varieties. All good samples.

Variety of Fall Apples—First prize awarded to an exhibit having ten varieties. This prize was well earned, as they were all excellent specimens, and the different varieties in every case correctly named.

Variety of Winter Apples—First prize to a lot of 18 varieties, all good specimens, but none named; second prize, to lot having 19 varieties, all named, but several of them incorrectly; notably the varieties named Lady Apple and Rox. Russet.

PEARS.

The exhibit of pears was poor. There were a few fair specimens, but most of them were inferior. The first prize for Early Pears had been very justly awarded to a plate of magnificently grown *Souvenir du Congress*.

GRAPES.

The show of grapes was the poorest I have seen at any Fair for some years. There were but two exhibits, and the first prize lot consisted of 1 bunch each of *Hartford Prolific* (very poorly grown) and *Brighton*, a small unripe cluster.

After concluding my notes on the fruit exhibit, I was requested to act as sole judge on flowers. This I found rather an easy task, as there was only about one or two exhibits in each class. The whole exhibition of flowers had been well arranged and appeared to the best advantage. Two or three large lots of greenhouse plants assisted very materially to give character to the whole exhibit. The Board very kindly

ordered the re-payment of my railroad fare, the amount of which will be found to the credit of the Association in my account.

In conclusion, I beg to suggest to those having control of the exhibition at Port Hope, the advisability of adopting some means in future whereby a larger number of people in that County may be induced to bring out their fruits and flowers for competition. If this were done to any reasonable extent, the East Durham County Agricultural Society, with the assistance, such as they now have from the Hope Society, and from the town of Port Hope, could make such an exhibition of fruit and flowers as might not be equalled but by few places in Ontario.

Respectfully submitted,

THOS. BEALL.

Lindsay, Nov. 1, 1884.

PEGGING DOWN ROSE BUSHES.

When dwarf bushes form growths in autumn, from five to eight feet in length, it seems a pity to cut them all off at pruning time in spring, and where there are many plants grown we would strongly advise that a number of these growths be left uncut, and peg them down. They will not, if very strong, bend down to touch the ground, as some may think of trying to root them; but this is not the object, the principle being to bend them over and peg them about a foot or so from the ground, allowing them to remain full length, and every bud along the stem will soon send up a shoot, and these pegged down stems will bloom very profusely. For profuse blooming no plan will equal this, and it is rather surprising that pegging is not oftener practiced. Any one wishing to possess a mass of Roses, growing and blooming in semi-wild confusion, could not do better than peg down the shoots over some beds.—*Vick's Magazine*.

HORTICULTURAL CONCLUSIONS.

PROF. J. L. BUDD.

Some of the conclusions reached by the experts at the recent meetings of the Mississippi Valley Horticultural Society at New Orleans, and of the Iowa State Horticultural Society at Atlantic, are worthy of brief notice.

WILD BLACK CHERRY.—Slowly but surely this tree is coming to the front as one of the most valuable for varied soils in most parts of the Northern and Western States. Very many reported it easy to propagate from pits, very rapid in growth, and best for many economic uses of timber. Dozens of examples have been given where on high, dry, prairie soils it has made more growth in 15 years than Soft Maple.

YELLOW TRANSPARENT APPLE.—From many States of the Union come good words for this earliest of summer apples. Even experts from New York, Connecticut, New Jersey and Ohio, agreed that it was earlier than Early Harvest, quite as large and handsome and fully equal in quality. In addition, it comes early into bearing, and seems as regular in its crops as the Duchess. In the Mississippi Valley it was reported favorably, in Minnesota and in Texas.

CHARLOTTENTHALER belongs to the same Russian family as the Yellow Transparent. It is now added to the recommended list of the Iowa Society, and has received favourable reports from nearly all parts of Mississippi Valley. It is larger in size than the Transparent; but of the same shape, color, and quality. The tree is a better grower in the nursery and has proven as free from twig blight as the Duchess. The general belief now is that it will prove the best early apple over a large portion of the States east of the Rockies.

THE LONGFIELD APPLE has been exhibited and reported favourably upon by dozens of careful observers. It bears

heavy crops when young, and during our past extreme seasons it has made a growth of eighteen inches of new wood when maturing a heavy crop of fruit. Mr. Haviland, of Fort Dodge, Iowa, reported that 42° below zero the present winter had not colored the wood of the Longfield, while that of the Duchess was much reddened.

This variety promises great things for the cold North, as above the 42nd parallel on the prairies it is a good keeper of really excellent quality. On our rich prairie soils it attains the size of Roman Stem, and colors up as prettily as the Maiden's Blush. It may be well to say that the variety which Dr. Hoskins has guessed to be Longfield is wholly different in size, color, and quality, but promises to be valuable.

WINTERAPUT.—In the exhibit of apples from Moscow at New Orleans the plates of this ancient apple attracted much attention. It is smaller than Alexander, and more regular in form. Its striping is coarse and irregular; stem long, in deep, regular, russeted cavity; eye large, open, in irregular, ridged basin.

It is a popular winter apple, of far better quality than Willard, in Central Russia. The trees have been widely distributed in the Mississippi Valley, and are proving hardy even in Northern Dakota. Top-worked trees have fruited in Northern Iowa.

AUTONOOKA.—The specimens of this apple from Moscow were not in good condition after their long voyage; but its near relative, English Reinette, was as firm and bright as when packed in October. The family attracted much attention and brought out much discussion. The point was made that this ancient family of yellow apple of the Russian steppes has planted its birthmarks on a number of our yellow apples noted for their hardiness. Autonooka,

Possarts, Nalivia, Northwestern Greening, Tracey, Roman Stem, Grimes' Golden, Malinda and several promising seedlings were grouped to show the prepotent influence of one of the most noted and ancient families of the Russian apples.

RUSSIAN PEARS.—Specimens of the wood of the Russian pears which had endured 42 degrees below zero—after a thaw and rain which had left a coating of ice on the twigs—attracted much attention, and drew out considerable discussion. It is well known that the Flemish Beauty colors its new wood in our mildest Winters, and our last test Winters have destroyed the trees on our black soils, root and branch. Hence the bright color of the wood of the pears from the home of the Oldenburgh, has strengthened the belief that we will yet grow pears on our black soils profitably. The reports in regard to the perfect health of the foliage of these new comers during our past three trying summers, were also very favorable.—*Rural New-Yorker*.

THE WHITE PINE.

At a meeting of the Massachusetts Horticultural Society a paper was read by Avery P. Slade of Somerset, on Forest Tree Planting, in which he thus speaks of our white pine:—

The white pine is best adapted to the soil and climate of most of our waste lands. A soil in which the white oak flourishes will produce grass, and one that suits the chestnut will grow grain; but the white pine not only grows rapidly on land which is apparently destitute of all plant food, but positively enriches it. It is, however, not successful near the sea coast.

Although in many instances white pines have been planted because the land would produce nothing else, and often to gratify the taste by covering a

rocky hillside or sandy plain, and not with a view to profit, and though they have seldom received any culture after planting, in no instance that he had investigated had it failed to be a paying investment. Zebulon Pratt of Bridgewater purchased twenty-five acres of wornout land in North Middleborough for \$25 per acre, and in the spring of 1863 had it set to white pines, at an expense of about \$200. The plants were from six to eighteen inches high and were set in rows ten feet apart each way. In December, 1883, they were from twelve to sixteen inches in diameter and in a thrifty condition, and Mr. Pratt has been awarded premiums by the Plymouth County Agricultural Society for the best plantation of pines. The lot is now taxed for \$800, which is based on a two-thirds valuation, and as towns are inclined to favor such experiments, it is fair to presume that this is not too high a valuation, and that the cash value of the lot is \$1200. The cost of the land (\$225), setting the trees (\$195) and taxes for twenty years, aggregate \$540, which, in twenty years at compound interest at five per cent., amount to \$1431, or \$231 more than its supposed value. But Mr. Pratt says he did not embark in this enterprise for profit, but to benefit the inhabitants of the village, and that he might be remembered pleasantly by those coming after him. Had he planted with a sole view to profit he would have put the trees 10 feet by 6, instead of 10 by 10, thus having 726 trees to the acre instead of 425. It is pretty generally conceded that pines 6 feet by 10 will make a growth of more value than at a greater distance apart.

At 10 feet by 10, there is a greater growth of branches, which are of little value, and less growth of body than when planted nearer. Now, if 425 trees to the acre brings the value of the lot

up to \$1,200, 726 trees to the acre would be worth the round sum of \$2,000, which is \$272 more than the whole outlay would have amounted to at six per cent. compound interest for twenty years. This plantation, Mr. Slade reported from personal observations, covers a sterile ridge of sand and gravelly loam. What surprised him most was the number and extent of the branches; beginning near the ground, each tree seemed to vie with its neighbor in throwing them out horizontally in every direction, from five to fifteen feet in length, interlocking so as to form in many places an absolutely impenetrable jungle. The conviction was irresistible that had the trees been properly trimmed from time to time (and the wood would have paid the expense), the present value would have been at least one-third more. There were said to be 10,775 trees, and could the whole growth have been thrown into the trunks, they would at a moderate estimate have been worth 25 cents each, or a total of \$2,694, exclusive of the land.

J. D. G. Williams, Raynham, set a piece of pine in 1850, the value of the land being \$10 per acre, and the cost of setting \$5 per acre, and after twenty-five years' growth, the standing wood was sold for \$150 per acre, affording a very large profit, and leaving the land in good condition to set again. Mr. Williams also set a piece of pine in 1841 on land of the same value, the cost of setting being \$6 per acre. This is, perhaps, one of the earliest experiments of the kind ever made in Bristol County. The trees apparently came to maturity in 1876, having made no perceptible growth since that time. They were set in rows, from six to nine feet apart and from four to six feet in the rows. The lot has an eastern exposure, and the trees on the eastern side were evidently set for a wind break, being not more than four feet apart. They are

large, with many strong angular branches, resembling in shape an oak as much as a pine, and contain as much timber as those less exposed, but it is not so valuable. In 1876 an experienced lumberman estimated this wood at seventy-five cords to the acre, two-thirds being suitable for box boards, worth at the mill, three miles distant, six dollars per cord. No arithmetic is required to show this to have been a profitable investment.

The late Richard Sampson, of Middleborough, set pine trees on a piece of land too poor to cultivate, which are now thirty-one years old, and estimated to be worth \$150 per acre, and would probably bring a much higher figure. This piece contains about ten acres, and is remarkable thrifty, and its growth during the next ten years will greatly increase its value.

The above instances of rapid growth and profitable results are not exceptional, but are selected because their history could be given more in detail than others. Plantations of pines from five to thirty years old may be found in Norton, Mansfield, Taunton, Raynham, Easton, Randolph, Middleborough and the Bridgewater, all giving promise of remunerative results.

THE YELLOW TRANSPARENT.

Of all the early varieties of apples adapted to our high latitude the above named Russian, is, all points being considered, the most desirable of anything that I have ever fully tested. It is as hardy as the Duchess, and as thrifty; comes early into bearing; fruit medium of size, and in quality good; tree a regular bearer; the apple at its best about the middle of September; the tree being very upright in its growth will admit of its being set very close in the orchard. The great abundance of light green foliage of the tree, and its fruit of marble-like appearance makes a very fine con-

trast with other varieties. Grafted upon the limbs of large trees, the third season after grafting, it comes freely into bearing. I have placed scions of this variety upon crab stocks of one season's growth, and the third season from grafting, the trees have made quite a show of fruit. In localities where the Red Astrachan proves tender, the Yellow Transparent will fill the gap. The Tetofsky, though hardy, has as we all know, the bad fault of prematurely dropping its fruit. The fruit of the Yellow Transparent has a grip upon the tree that only loosens by ripeness. To the cold north this will prove a valuable addition to our rather limited list of hardy varieties—N. D. SMITH, in *Home Farm*.

THE LARCH.

According to Michie, one of the latest writers on the subject, the White Larch (*Larix Europæa*) was probably introduced into Great Britain about 150 years ago. The oldest known Larches in the United Kingdom are two fine trees called "The Mothers," which were planted near the west end of the cathedral of Dunkeld in 1736 or 1738 by the then Duke of Atholl. The larger of these trees has to-day a girth of twenty-two and a half feet at one foot from the ground, is a hundred feet high, and is estimated to contain 480 feet of measurable timber. When first brought to Dunkeld, the young Larches, five in number, were in flower-pots, and were carefully kept in a greenhouse as rare and tender plants.

Of these five "Mother" plants two only are now standing, although three of them grew to be large, handsome trees. The fate of the third is thus described by Mr. Michie: Mr. McCrosty, gardener and forester to the Duke of Atholl, was a man of sterling character and ability, and to the end of his life a

much-esteemed and favored servant. Everybody, however, had to give way to him, for the redoubtable McCrosty had an unusually hasty and fiery temper. On one occasion McCrosty mentioned to his Grace that the saw mill at Inver, Little Dunkeld, required a new axle. The Duke, having at the time some friends with him, requested McCrosty, probably as a joke or to show him off, to cut one of the "Mothers." This so enraged the veteran forester that he made a desperate effort to strike the Duke, being only restrained by the noblemen present and the opportune shutting of the door. Baffled in his efforts to strike, he took off and flung his shoe at his Grace, and left his mark on the intervening panel of the door. The tree, however, was cut down, but, adds Mr. Michie, it could hardly be said "whether the Duke or the forester in calm moments regretted the frolicsome and impulsive act the more, for his Grace could never afterward speak of the transaction without unmistakable signs of regret, while over it the forester is said to have shed many tears. And, after all, the tree was never converted into the axle for which it was cut down, but filled a higher and nobler destiny in making articles of furniture."—*Floral World*.

GARDEN VIOLETS.

The Violet is a blossom for all the year round, and there is not a month when one need be without fresh blooms of it from cold-frame, garden, or window-boxes. Planted in a shady corner of the garden, where yet they have an airy, well-drained nook, Violets will take care of themselves, with the kindness of a covering of dead leaves in fall. But they last so long and give such richness that the borders are worth preparing well. What the garden Violet dislikes most of all is standing

with its feet in the wet, unlike the fragrant white wild Violet, which we find in meadows and bogs.

My Violet border is planned to give a succession of bloom the year round, the earth from the three-foot bed being dug out two feet deep, and the sides stoned up with rubble laid in mortar with which coal-ashes have much to do. This keeps the Violet roots from gadding, and from freezing, likewise. Nine inches of stone are filled in for drainage, with turf and some old pounded mortar above, to keep the earth from washing down, and the other foot is Violet soil—good strong loam for the basis, with liberal mixture of old barn-yard stuff, and the top leaf-mold, rich garden and sand with plenty of bone-dust, which Violets love. The border lies under the lee of a little wood which skirts the grounds, facing full south, but screened by tall plants the other side of the walk. Here the roots will spread into great crowns nearly two feet across, within the year. In this favored spot one may feel sure of finding Violets in any month of the year.

In autumn, a wooden frame and sash goes right over the border; plants that have been growing in the shady corners of the garden are brought under cover, the old ones well enriched and half smothered in dead leaves, which are heaped around the frames, and the Violet season goes merrily into Christmas-tide. New plants are coming into bloom while the old ones are resting. They get their bone-dust, their weak tea of old leaves, old wood, and very old manure steeped in rain-water when the soil is very dry, and they do nothing but grow and blossom. Only one thing they ask—not to get too wet. You can hardly give Violets little enough water in cold weather. Only till the earth is dry several inches deep, need you water them, which will be once in two or three weeks. They will bear

the sashes lifted in sunny noons, and warm winter rains for perhaps half an hour; but avoid letting them get drenched, or having any drip from the sashes. That brings yellow leaf and decay among the crowns.

Very few people know the varieties, even, of sweet Violets which enrich the border. The English, the Neapolitan, and the new Russian varieties, are barely known by name; but you will hardly find one well-educated person, not a gardener by calling, who can tell the difference. As the sweet Violet, *Viola odorata*, is native in England, Russia, Italy, and throughout Europe and part of Asia, we may look for differences of interest in all.

Neapolitan Violets are pale, long-stemmed, and so fragrant that you think of Violet Attar in the room with a cluster of them.

Marie Louise is deeper purple, and a rich bloomer, which with care, in the open garden, starting early in a sunny, sheltered place, will give flowers in spring and autumn.

The English Violet is deeper purple still, and the standard garden variety for ease of cultivation and sweetness. Roots of this should be planted in every sheltered spot, under shrubbery, on light wooded banks, the north side of houses and arbors, wherever one wants the winds to be laden with sweetness.

The true *Russian Violet* is small; the *Czar*, large, deep purple, almost black by the side of others, and very sweet.

The Victoria Regina, a large, deep-hued, scented Violet, is not to be confounded with the *Queen of Violets*, which is white, double, and large, vying with the *Belle de Chatenay*, inimitable for its tinged pale petals, which suit the snow-wreath *Heliotrope*.

The winter cultivation of Violets is easy, and they are the most charming of house plants, bearing dry air and

neglect with more equanimity than many favorites, only dying of gas and overheating.—*American Garden.*

NITRATES ARE NEEDED.

Early in spring, the conversion of the nitrogenous matter of the soil, or of manure, into nitric acid, is exceedingly slow. It needs heat and moisture, bacteria and lime. In moist land, during hot weather in summer and autumn, the conversion takes place most rapidly. This is an advantage to the grower of winter wheat or winter rye. The growing wheat or rye plants in the fall take up the nitrates. I cannot go into the subject now. What I want to say is this; ordinary farming can avail itself largely of the natural fertility of the soil. We can grow crops of corn, and wheat, and grass, for many years without manure. But not so the market gardener. No soil in the world is naturally rich enough to grow garden crops to advantage and profit. Why? Not because garden peas require any more or different plant-food than field peas, or garden beets any more than mangel wurzels. It is because the gardener desires early crops. He desires to get the growth at a season of the year when little or no nitrates are formed in the soil. To attain his object, he puts into the soil a monstrous quantity of manure. To grow a crop of early cabbages, or early cauliflowerers, it is almost impossible to make the land rich enough. At any rate, we find that the richer the land is made, the earlier and better are the cabbages, and the more profit. We have to furnish three or four times as much manure as the crop needs. Why? Because the soil is cold and no nitrates are formed. We try to furnish the plants with all needed nitrates by an excessive application of manure—better apply the nitrates direct. This is not theory. I have been trying for years

to grow good celery plants in the open ground. I could succeed only where the ground had been excessively manured for some years past. I have plowed in, the previous autumn, seventy-five to one hundred tons of the richest, well-rotted manure, and had "fair to good" celery plants. Now, by the use of nitrate of soda I can get celery plants earlier, larger, and every way better, at less than one quarter of the cost. There is no mystery about this. I presume we apply more nitrates than three hundred tons of manure per acre would furnish early in the season. Later, of course, when the manure commences to decompose an abundance of nitrates would be formed, but then early garden crops want the nitrates while the soil is so cold that nitrification cannot take place.—JOSEPH HARRIS in *American Agriculturist*

AUTUMN TRANSPLANTING.

Ben Perley Poore, in the *American Cultivator*, says: "Autumn is, so far as my experience teaches me, a better season for transplanting trees and shrubs than spring. Any trees, even the most delicate, may be successfully transplanted in autumn, if a little protection is afforded them by covering the root during the first and most trying winter. Where complete success is hoped, it is best to shift their locality in the fall, if possible. The protection of most trees, shrubs and woody plants may consist in spreading a few inches of litter from the stable around the trunk and over the roots. Delicate plants are sometimes supposed to be destroyed by too much protection after being transplanted, when, in fact, they perish for want of it, being killed by the alternate freezing and thawing of the earth and its surface. This difficulty might have been easily obviated by covering them with evergreen boughs or meadow moss.

"When trees or shrubs are transplanted in autumn, the earth becomes consolidated at their roots, so that the radical fibres soon take firm footing in the earth, and the plant is prepared to vegetate with the earliest advance of spring.

"In transplanting trees and shrubs of every description, it is desirable that as much earth as possible be removed with the roots. If this is done, there will be less danger of their suffering by the change of situation. The excavation of the earth for the reception of the roots of trees and shrubs should bear some proportion to their size. They may generally be made from four to six feet in diameter, and of about 18 or 20 inches in depth. Large trees will require a larger opening than this, and small ones not so large. The subsoil where they are to be located may be thrown out and replaced at bottom with a fine mould, intermixed with a portion of good manure. Trees transplanted should stand two or three inches deeper in the earth than they stood previous to their removal. In no case should the extra depth exceed this. The radical fibres are to be spread horizontally in their natural position, and the soil intimately blended with them and compactly pressed about the trunk and over the roots. No manure should be permitted to come in immediate contact with the roots, though it should be plentifully placed about them on all sides. Should it touch them, they will be likely to sustain injury and rot.

"Though moist, dull weather is generally best for transplanting, it should not be done when the ground is very wet. The earth should be only moderately moist, otherwise it will be clammy and heavy. The operation of transplanting is most successfully performed in cloudy days, and a little before evening, previous to a shower. The reasons for this are obvious. If it be done when

the earth is dry and in the middle of the day, plants require watering and shading for a considerable time afterwards. The tops of trees and shrubs transplanted must be lessened in proportion to the loss the roots may have sustained. Otherwise the plant will perish from the loss of its nourishment. The ordinary quantity of root being diminished, the exhaustion from evaporation will be greater than the absorption of the remaining portion of root, so that the plant will die by transpiration. If the above old rules are followed, the trees and shrubs transplanted will almost invariably live."

THE TULIP TREE.

A writer in *Index*, Vineland, New Jersey, says, "I can testify of the beauty and stately character of the old tulip trees I have seen in various parts of the country; but in our region, the native trees being all on low and damp ground, we feared they would not do well on our poor, dry, gravelly and sandy barrens. They have been pretty liberally tried on all kinds of soil for street trees. The result is they outgrow all other kinds beside them, are bright and clean in foliage, symmetrical in form and stately in appearance. No other kind so quickly makes a satisfactory shade tree for the street or park. I have not yet seen, among the many hundreds here, an 'ill shaped' one or a 'broken branch.'"

Thomas Meehan says of it, "When unsurrounded by any other tree it branches out close to the ground, and presents a fine conical appearance till it gets old, when it becomes somewhat irregular and rough. Few trees are better fitted to form a single object on a lawn or in a park; the very peculiarity of its foliage and appearance suggesting the exclusiveness in which it would stand in order to show off its

entire beauty. It thrives best in strong, clayey or micaceous soils." He adds, "It is short-lived in towns, and soon shows a distaste for city life." Some fine specimens are to be seen growing on one of the streets of St. Catharines, but perhaps the city has not yet become so large as to be distasteful to the Liriodendron. They are handsome at all times, and particularly attractive when covered with their large, yellow, tulip-shaped flowers.

AN ORCHARD FERTILIZER.

The best fertilizer I have used for fruit trees is chip-dirt from the wood-pile, and old ashes. I mix in the proportion of one bushel of the ashes to three of the chip-dirt, stirring well with the shovel. About two bushels of this mixture is to be spread around each young tree, giving large, well-grown trees more. The manure is applied at any season. Do not pile around the trees any litter or rubbish that would harbour mice. In summer keep the weeds from around the trees. Experience has taught me that this fertilizer serves a very important purpose, not only in supplying the trees with suitable food, but in mellowing the soil, and helping on such crops as I may choose to plant in my orchard. It is an excellent fertilizer for any crop, annual or perennial, and the ashes (from hard-wood), supply the trees with the element they most need, and the soil lacks, namely potash.

It is a pleasure to see how a young orchard will thrive after an application of this fertilizer. Sometimes I burn logs to get ashes for this purpose, and if I have no chip-dirt, I go to a dead oak or hickory, and scrape together the fallen bits of bark, and the rich earth around the tree. It is a very good substitute for the chip-dirt. It is obvious that this material is rich in the elements of food of trees. I believe in

keeping fruit trees well fed, and that a large space around each tree should be given exclusively to the tree from which to draw its supplies. I never plant close to my trees, preferring to have them branch low, and to trim down rather than up.—B. W. JONES in *American Agriculturist for March*.

A NEW REMEDY FOR THE IMPORTED CABBAGE WORM.

Professor C. V. Riley says: "One of my correspondents, Mr. Charles H. Erwin, of Painted Post, N. Y., has accidentally hit upon so simple and yet, according to his experience, so perfect a remedy for the imported cabbage worm that I wish to give his experience as much publicity as possible, that it may be widely tested and, if possible, verified the coming season. It is, to sum up an extended experience which he narrates, simply ice cold water, or water but a few degrees warmer than ice water, sprinkled upon the worms during the heat of the day. Mr. Erwin found that such an application in the hot sun caused them to quickly let go their hold upon the leaves, curl up, roll to the ground, and die, while the cabbages suffered nothing, but looked all the fresher for the application.

Should this method prove as successful with others as it has with him, it is evident that we have here a remedy of very general application, and one which in cheapness and simplicity far transcends the Pyrethrum which, since I discovered its value for the purpose, in 1880, has been, on the whole, our safest and most satisfactory remedy against *Pieris rapae*. Where ice is readily obtainable, as in the more Northern States, or where cold springs obtain, Mr. Erwin's discovery will prove of very great value to cabbage growers, and will probably prove just as useful against some of the other cabbage worms."—*Scientific American*.

WILD FLOWERS.

BY AUGUSTUS WATTERS.

Oh! dainty baby foresters
That hide in silent nooks,
That linger by the cowpaths
And peep into the brooks;
Your dimples bring me back again
The merry days of old,
When every wood was fairy-land
And buttercups were gold.

By mossy rocks and nodding ferns
You lift your timid eyes,
And by the wounded maple trees
In smiling groups arise.
No more the shrieking winter winds
Affright the naked woods,
But all the scented aisles are gay
With Flora's dappled hoods.

Again the daisy's snowy sails
Overspread the grassy seas,
Again a thousand tiny masts
Bend low before the breeze;
And daffodils, in scented robes,
On sunny knolls are seen,
And dandelions, like little suns,
Shine out amid the green.

Though years have sped since first for me
You made the meadows bright,
And many a sunset tinted dream
Has faded into night,
Still do I hail with boyish love
The violet's balmy breath—
Still joy to see the crocus burst
From winter's icy death.

I trace the tints of deathless Hope
In all your tender beauty,
Ye tiny bards that sing to man
Mid stony paths of duty,
That whisper of a paradise
The toiling years shall give,
When grief, and hate, and death shall die,
And only love shall live!

HYDRANGA PANICULATA GRANDIFLORA.

—This shrub deserves much more attention than has been usually bestowed upon it. It's an easy growing plant, very profuse bloomer, bearing extra large showy panicles of pure white flowers—sometimes tinged with pink as it ages—holds its blossoms an exceedingly long period, blossoms in fall when no other shrubs are in flower, and its blossoms make nice dried parlor ornaments in winter. We consider it one of the best, and too long neglected. It deserves a place everywhere.—*Palmer's Monthly*.

THE DAHLIA IN THE GARDEN.—The Dahlia is, no doubt, destined to be more prominent in good gardens than it ever yet has been. The tall, handsome plants with large double flowers will occupy con-

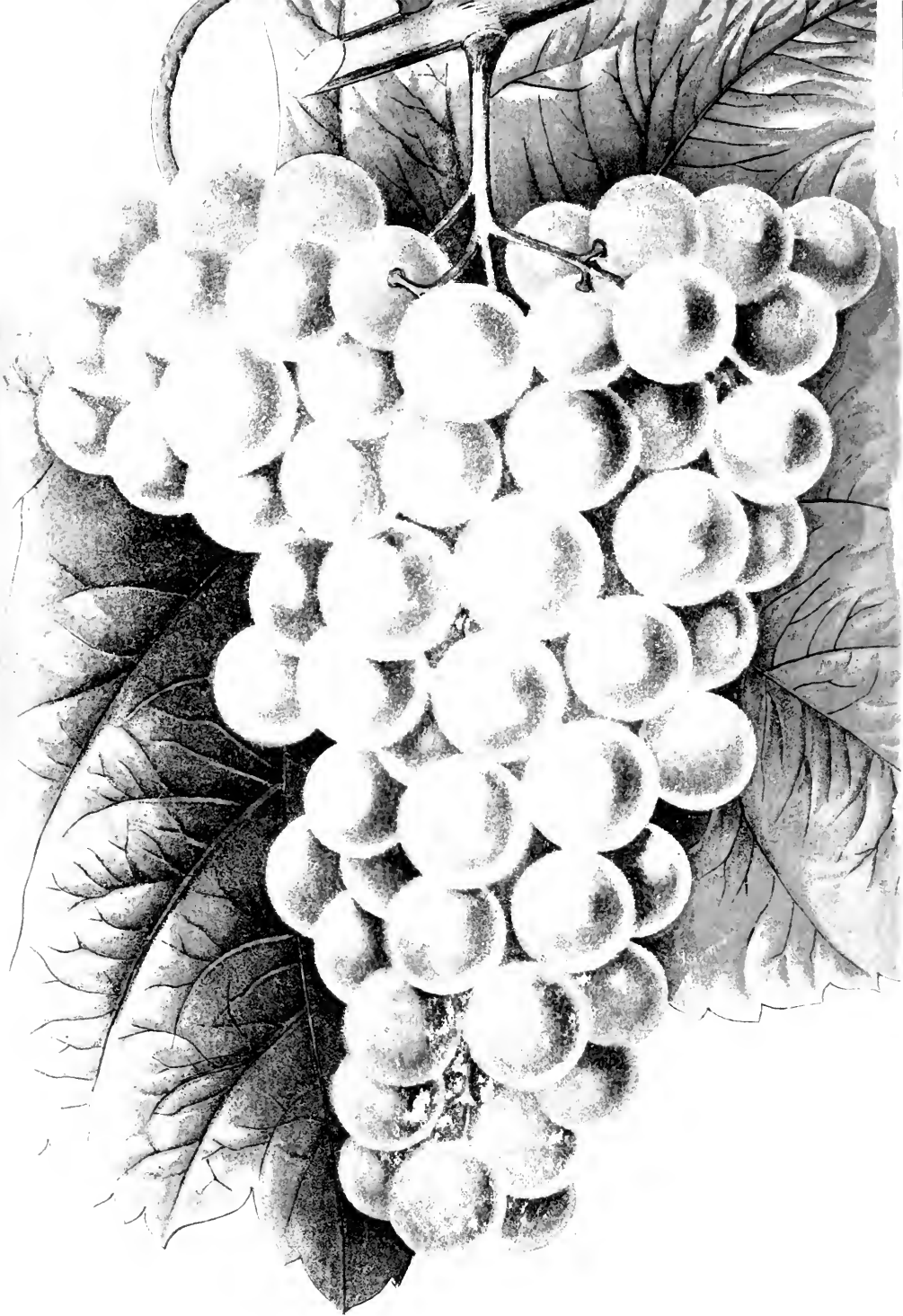
spicuous places where they will show to advantage. The bedding or dwarf varieties will be raised in masses in beds and on the borders of shrubberies; the bouquet and single varieties will be valued as cut flowers. Thus there is a special value to each class, and blooming, as they all do, in the autumn, they are without rivals in their season.—*Vick's Magazine*.

MOST PROFITABLE STRAWBERRIES.

—This season's experience will teach our strawberry growers the advantage of planting late ripening varieties. To secure good paying prices those sorts should be grown which ripen after the main crop from the South has been marketed. So long as the South continues to ship this fruit in large quantities the earlier varieties should be left to that section and only grown here for home market. Among the late ripening sorts are Sucker State, Sharpless, Crescent, Cornelia, Jumbo, Windsor Chief, Mt. Vernon and Cumberland.—*Farmer and Fruit Grower*.

CODLIN MOTH.—Mr. Moody, of Lockport, states that farmers of Niagara County spray their apple trees with water containing a very little Paris green in suspension, with marked success in preventing injury from this insect. He uses a force pump with the liquid for spraying, placed upon a farm waggon. An attachment connected with the rear wheel of the waggon, operates the pump and keeps the liquid stirred, so that a single man is enabled to drive the team and syringe the trees. Upon trees sprayed with the mixture two or more years in succession, the codlin moth is almost unknown.

ADVICE TO FRUIT-GROWERS FOR HARD TIMES.—"It will certainly do no good to grumble and complain of hard times, trying to make ourselves believe that times are worse than they really are. Let us rather bring to bear on our respective pursuits increased skill, energy and perseverance. We must be prepared for these periods of depression, 'hard times,' for they are sure to come sooner or later, and generally sooner. The preparation we need to make is to become first-class cultivators. Poor farming, poor fruit-growing and gardening, will always fare badly in hard times.—*Vick's Magazine*.



JEFFERSON GRAPE.

PAINTED FOR THE CANADIAN HORTICULTURIST.

THE Canadian Horticulturist.

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THE JEFFERSON GRAPE.

Such is the excellence of this grape that we hailed its introduction with more than usual satisfaction. The fruit that it was our privilege to test was not only very pleasant to the eye, but also delicious to the taste; the flesh, while somewhat meaty, was tender and juicy, with a rich, aromatic and slightly vinous flavor. The fruit possessed also the very desirable quality of maintaining its freshness for a long time after being gathered. The vines also are healthy and very vigorous, and the leaves thick and downy, and as it was reported to ripen with, or very soon after the Concord, it was expected that the Jefferson would be a very desirable acquisition.

The object specially in view in thus calling attention so prominently to this grape, is to obtain from our readers their experience with it thus far, and to request them to note carefully its performance this season, and to communicate their observations to the *Canadian Horticulturist* for the benefit of others. We are entertaining some fears lest this excellent grape shall be found to ripen too late for any but the warmest sections of Ontario, and are desirous of laying before our readers all

the information that can be obtained with regard to its adaptation to our climate. It is disappointing to plant an otherwise very desirable fruit if it turns out at last that our summer season is too short or too cool to admit of its ripening perfectly. If, on the contrary, experiment shall have demonstrated that the Jefferson will thrive and bring its grapes to perfection in any considerable part of Ontario, those who desire to plant choice fruits of the finest quality, will be greatly gratified to know the fact.

Fortunately, we have some excellent grapes that do ripen sufficiently early to be planted with confidence over a very large part of Ontario. The *Early Victor* is one of these. It is a chance seedling, having no known parentage, that has been cultivated and disseminated by Mr. John Burr, of Leavenworth, Kansas. We have found the vine to be perfectly hardy here, healthy, vigorous, and very productive. The bunches and berries greatly resemble the Clinton in size and color. The flesh of the grapes is slightly pulpy, has a most agreeable sprightly vinous flavor, without the least trace of foxiness whatever. The fruit ripens a

little earlier than the Hartford Prolific. We can confidently commend this variety to the attention of our readers.

The *Brighton* is another good grape that ripens before the Delaware; but larger, both in bunch and berry. It is of a dark maroon color when fully ripe, juicy, sweet, and slightly aromatic. It should be eaten as soon as it is gathered, for it loses its sprightliness if kept. This variety is reported as doing well at Trenton, Ont., and other places of similar climate.

There is no need of enumerating here all the early ripening varieties that may be planted without hesitation. What is needed more than a list of such varieties is the conviction on the part of planters, that if they would enjoy good ripe grapes they must take care of their vines, and particularly not allow them to over-bear. Proper thinning out of supernumerary bunches will make fully a week of difference in the time of ripening; nay, more. We have often seen vines so over-loaded with fruit that they could not and did not ripen their crop at all.

THE AMERICAN POMOLOGICAL SOCIETY.

The next meeting of this Society will be held at Grand Rapids, in the State of Michigan, on the 9th, 10th, and 11th of September next. The Michigan State Horticultural Society and other kindred associations are putting forth combined efforts to make a grand display of fruits on the occasion. Doubtless Secretary Garfield, so favorably known to many of our readers as

an enthusiastic and indefatigable worker in horticultural matters, will shew the world what Michigan can produce in the way of fruits, and possibly flowers as well. The State Legislature appropriated one thousand dollars for the purpose of defraying the expenses incident to the collecting and exhibiting of the fruits of the State at this meeting, which will be attended by representative men from all parts of the United States and British Provinces. Lectures will be delivered by some of the highest pomological authorities on the continent, profusely illustrated with charts and diagrams.

The Secretary of the Fruit Growers' Association of Ontario is authorized to issue a certificate to any member who intends to attend the meeting at Grand Rapids, which will make him an accredited delegate of our Association to the American Pomological Society, and entitle him to a seat in the Assembly, and all railway and hotel commutations. Members intending to attend will please apply for credentials to the Secretary, D. W. Beadle, at St. Catharines.

THE TORONTO INDUSTRIAL FAIR.

We have received from Mr. Hill, Secretary of the Toronto Industrial Fair, which is to be held this year from the 7th to the 19th September, a copy of the Prize List, in which is offered over \$25,000 in premiums, a large proportion of which is for Live Stock and Agricultural Products, &c. The Directors announce that they are preparing an immense programme of Special Attractions, which they promise will eclipse any of their previous efforts. Any one desiring a copy of the Prize

List or other information in connection with this Exhibiton, will secure it by dropping a post card to the Secretary, at Toronto.

CALIFORNIA FRUITS.

A subscriber residing in California writes to us that their fruits are obtained from all countries. The Japan plum is a dwarf tree with very large fruit, dark color, peculiar flavor and productive. We have no finer apricots than the old Moor Park and Royal. There are a good many California seedling peaches, but Early Crawford and Foster are most in demand, Susquehanna, &c. In extra early nothing better than Alexander and Waterloo. Our best plums are Pond's Seedling and Victoria, very productive, Reine Claude de Bavay, Purple Gage, Imperial Gage, and for canning the Yellow Egg. If you know of any cherry that is superior in keeping qualities to the Napoleon Bigarreau please to let me know.

PEACHES IN NEW JERSEY.

Julius Johnson has fifteen acres in peach trees, planted twelve years ago. He grows no crop in his orchard, cultivates the ground thoroughly and manures with wood ashes and stable manure. He has netted eighteen thousand dollars from this orchard. W. J. Case has an orchard of eleven acres, planted in 1874. Since 1879 he has applied annually four hundred pounds of ground bone to the acre, and obtained for the fruit eleven thousand three hundred and sixty-eight dollars net. Soil clay. S. K. Everett uses bone and muriate of potash in equal quantities at the rate of 350 pounds per acre. Soil clay loam, cultivated without any other crop. For four years past he has realized \$900 per acre. The *Country Gentleman* is our authority, who

gleaned the facts from the fifth annual report of the New Jersey Experiment Station.

VERY HARDY FRUITS.

The *Home Farm*, published at Augusta, Maine, states that the following varieties came out all right this season : having endured, during the winter, a cold of thirty-five, thirty-eight, forty, and once forty-two degrees below zero, and on the seventh of June were making a strong growth : Of Apples, they are, Charlottenthaler, Duchess of Oldenburg, Golden White, Grand Sultan, Green Crimean, St. Peter, Switzer, Tetofsky, and Yellow Transparent ; which all ripen in the summer and fall ; and Antonouka, Arabka, Bogdanoff, Longfield, Red and Yellow Anis, Titouka, and Winter Aport ; which ripen later. The varieties such as Red Astrachan, Alexander, McIntosh Red, Pewaukee, Ben Davis, Fameuse, Mann, etc., which have been often styled "Iron-clad," are stated to be not anything like iron-clad. To the above named Russian apples the writer adds Wealthy and Scott's Winter as perfectly hardy in the coldest parts of New England ; likewise Walbridge and Wolf River.

Of Pears, he says Clapp's Favorite and Flemish Beauty, and some others not named, which have for the past seven years seemed to be unharmed, are this season dead or dying ; but of his dozen or more sorts from Eastern Europe, not one was injured. He names only two of these, the Besseimanka and Sapieganka.

Of Cherries, the following have wintered well, viz. : Double Natte, Griotte du Nord, Lieb, Large Montmorency and Ostheina.

Of Plums, the writer says, "last winter was a scorcher for Moore's Arctic, all my trees are badly hurt ;"

and adds that of all the older sorts only the Blue and Yellow Orleans, cooking varieties from the Island of Orleans, below Quebec, came through unharmed. Two Russian trees received by him from Prof. Budd, without name, are quite uninjured.

The writer concluded by saying, "that in the experience of this test-winter of 1884-'85 the value of the tree fruits of North-Eastern Europe, and especially of Russia, looms up grandly as the only salvation for the fruit growers in the cold north in America."

PERMANGANATE OF POTASH.

Mr. N. Robertson, Superintendent of Government Grounds, Ottawa, writes to the *Gardener's Monthly* that after reading in the *Canadian Horticulturist* the extract which was taken from the *Garden*, England, giving the beneficial effects of watering plants with a solution of Permanganate of Potash, he was induced to give it a trial. The result of his trial fully corroborates what was said of it in the extract from the *Garden*. He says an amateur of considerable experience told him that his plants never looked as well as they do this year, and adds that his primulas are especially fine. Green fly has entirely disappeared. He has doubled the quantity and syringes with it every second night. Mildew on roses has disappeared, and the plants seem to have renewed vigor. In using it for syringing he finds that when it is allowed to stand mixed for any time it is liable to leave marks on the leaves, but not if it is newly mixed. Although it kills green fly, he says that it will not prevent new broods from coming, and every one ought to know how fast that is. Permanganate of Potash is a cheap article, and can be easily procured. Will not other gardeners give it a trial, and give the public the bene-

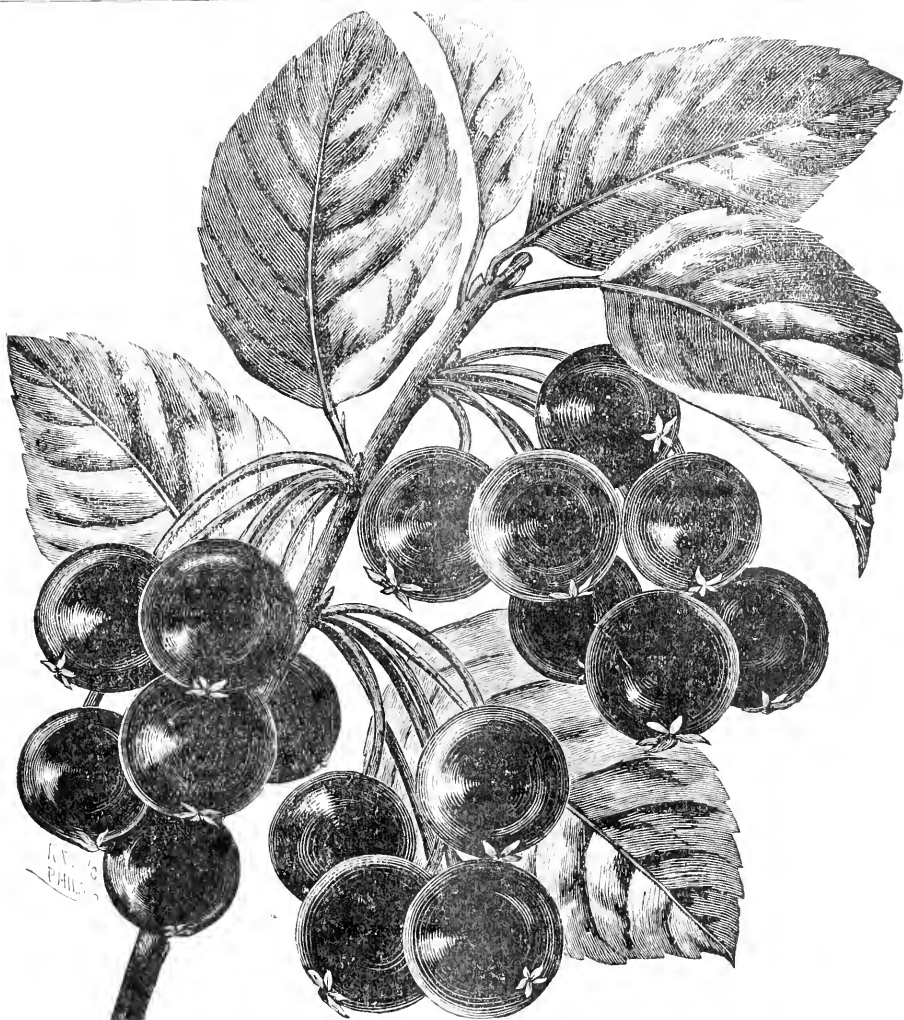
fit of their experience. The English gardener took as many crystals as covered a six-penny piece and dissolved them in one gallon of water for watering the soil, but for syringing used double the quantity of water.

THE CABBAGE AND ONION MAGGOT.

Professor Lintner, New York State Entomologist, in a communication to the *Country Gentleman*, says, "perhaps nothing better for the purpose of killing the pupæ could be used than gas-lime, fresh from the works, spread upon the ground after the removal of the crop, at the rate of two hundred bushels per acre." This is suggested because the maggots pass the winter in the ground in the pupa state near the place where the cabbage or onions grew, and the gaslime would be strong enough to kill them. The professor adds that thorough ploughing and harrowing the ground several times, with intervening intervals, would kill a large proportion of the pupæ.

A PROMISING NATIVE PLUM.

At the last meeting of the Fruit Growers' Association several of the members spoke of a red plum of good quality, especially valuable for canning, the tree of which was very hardy and very prolific. It was described as being of good size, nearly as large as the Lombard, sweet and ripening early. From what we could learn on further inquiry we believe that this is a variety of the wild plum of the Country which has been cultivated by the inhabitants of that section on account of its good qualities, and that it deserves attention. It will be much more valuable to us than the Miner or Wild Goose which are shy bearers here, and ripen late. We hope to receive some samples of the fruit when ripe, and if we do shall give our readers a more complete description of its appearance and quality.



THE BLUEBERRY.

THE BLUEBERRY.

We clip from the *Prairie Farmer* the following communication regarding this berry, and at the same time give an illustration which the writer of the communication seems to regard as a good representation of the fruit. It appears to us that the berries are larger than those found growing in our

swamps, but cultivation and care may make much difference in the size of the fruit. If any of our readers have grown it in their gardens or fields, we should be much gratified to learn the results :—

The blueberry is one of the most valuable fruits grown, and in extreme northern latitudes, where most other fruits

winter kill, is perfectly hardy and a regular bearer; yields a full crop in seasons when all other fruits fail. The fruit ripens in this latitude about the 1st of July, and is borne in clusters, like the currant. The fruit is about the size of the wild gooseberry; shape, round; color, a bluish-black. When fully ripe, the flavour is equal to the raspberry, a very mild, rich sub-acid, considered by most people delicious. Single bushes will often yield ten and twelve quarts in a season. The plant is about the height and size of the currant bush, and very stocky, holding the fruit well up from the ground. It commences bearing the first year after setting out, and furnishes a full crop the second and third years. Spring, during April and May, is the best time for transplanting. The plants are propagated from root-cuttings, the same as blackberries, but unlike the latter, the canes will continue to bear five or six years. The berries are very firm, being successfully shipped hundreds of miles. The demand for the fruit is great, and it brings on an average fifteen cents per quart wholesale.

DELOS STAPLES.

LODIA CO., Mich.

THE ANNUAL REPORT

Of the Fruit Grower's Association for the year 1884 is published at last, and before this reaches the readers of the *Canadian Horticulturist* the Report will have been mailed to all the members. We commend it to their careful study, believing that it will richly repay them. The discussions at the several meetings have been accurately taken down by a competent stenographer and will be found to express the opinions of men whose views are the outcome of long experience, coupled with habits of observation and reflection.

The range of subjects discussed will be found to be very great. Fruits of every sort usually grown in our climate, many of the vegetables, flowering plants, ornamental shrubs, trees, injurious insects, birds, &c., are spoken of in a

way that cannot fail to be helpful to any one who takes the least interest in the cultivation of any of the fruits or flowers.

The last fifty pages contains in tabulated form such information in regard to the several varieties of Apple, Pear, Plum, and Grapes that are grown in the different counties, as the Directors of the association were able to obtain.

This Report, so full of important information, and the *Canadian Horticulturist*, which is issued on the first of every month, are supplied to any one on payment of one dollar a year. Is there any cultivator of even the smallest garden who can get a better return than this from the expenditure of One Dollar?

FLORICULTURE IN THE SCHOOLS.

Perhaps some will say that the Fruit Growers were going very far beyond their proper limits when they took up the discussion of the cultivation of flowers in connection with our common schools. But it was high time that it should be discussed somewhere by some persons competent to discuss it, and one will go far and search long without finding a body of men more intelligent or more competent than the fruit growers of Ontario.

Our boasted system of common school education is far from being perfect, far from being abreast of the times. The scholastic ideas of the past ages have great need of being thoroughly re-examined in the light of the needs of the present time. Mental discipline can be secured by other means than by abstruse arithmetical conundrums. Habits of observation and some knowledge of things about us, are of more importance than much of the teaching now in vogue. Live, wide awake, observant, practical men and women

are the men and women that the times demand, and our present system of common school education is not as well calculated to produce such as it might be, as it ought to be. It needs to be made vastly more practical than it is at present.

It is to be hoped that the discussions under this head, which will be found from page 45 to page 53 of the Report of 1884, will be read and weighed by every parent in the Province, and that our educationists and our Minister of Education will see that there is room, nay necessity, for improvement in the direction here indicated.

PEACHES IN NIAGARA DISTRICT.

The crop of peaches in this far-famed fruit region will not be a full average, but the sample promises to be of very fine quality. We called recently to see the orchard of Mr. Osmond, who is one of the most successful peach-growers anywhere, and found many of the trees well laden with fruit. He cultivates the ground thoroughly, not allowing a weed to be seen, and never grows any crop but peaches in the orchard. His fruit is always fine and commands a ready sale at the highest price. His orchards are on high ground that is perfectly drained, and the soil is a strong loam.

CRANBERRIES.

At the summer meeting of the Fruit Growers' Association some one asked for information concerning the cultivation of Cranberries. Reply was made by the Secretary and such information given as could be imparted in a few words condensed into the short space of time that can be given to the answering of questions. We mention this to call the attention of those who are desirous of further information on this subject to the excellent paper of Mr. A. McD.

Allan at page 149 of the Report of the Fruit Growers' Association for 1884, where they will find the needed information given in the fewest possible words.

THE CHAMPION GRAPE.

The hardiness of this grape is something remarkable. Mr. Francis Coleman residing in Hamilton, writes to us that the past severe winter killed some of his vines and trees, but the Champion grape vine is as full and promising as ever. If this grape were of better quality it would be the most valuable variety we have for this climate.

PARIS GREEN FOR CURCULIO.

Three fruit-growers have recently told us that they sprayed their plum trees this season with Paris green, using a teaspoonful to two gallons of water, and that their trees are now loaded with fruit.

QUESTION DRAWER.

DEAR SIR,—I have taken your valuable monthly for the last two years, and am well pleased with it. The Worden grape I got for premium for 1883, I may say I killed it with kindness, as a friend of mine told me that a little ashes was good, so I gave it a little, but I think my little was a little too much; but the Prentiss I got in the spring of 1884, did far better last summer than some I planted the fall of 1883.

I have only a small garden, but to keep things doing well I can always see something wants doing. I think there is a good bit of truth in the letter from *Farmer and Fruit Grower* in last number, as no matter how small the garden or farm, if it will pay at all, it will pay to work it well.

Will you kindly inform me, through your next monthly, when is the best time to chop down a black ash swail to keep them from budding again.

I trust the *Horticulturist* will get greater success than ever, as it should be in every household.

WM. BARNHOUSE.

Flesherton, March 9th, 1885.

REPLY.—Will some of our readers who have experience in chopping black ash please reply.

WHAT THE PEOPLE SAY.

STRAWBERRIES BEARING THIS YEAR.

BY T. C. ROBINSON, OWEN SOUND.

(For the *Canadian Horticulturist*.)

The fruiting season is very late with us this year; so that at this date, July 9th—beyond which I must not wait if I am to reach the columns of the *Horticulturist* for August—the crop is not half ripe. This fact makes me cautious in judging of the later sorts, which are just coming in. (Notice that my land is sandy-loam, and all kinds grown for fruit are cultivated on the “Hill System.”)

The first variety to ripen in quantity was the *Crescent*, as usual. On the last day of June it gave a good picking of very choice fruit, which sold rapidly at highest prices.

Early Canada appears to be slightly earlier than *Crescent*, but the demand for plants has so restricted my fruiting of this sort that I could not make a fair comparison of it with others. The berry is about the size of *Wilson*, of about the same color, but not so glossy, and I think the crop about equal, but the berry is less firm than *Wilson*. *Early Canada* appears to have decided value as an early berry for a not too distant market.

The Wilson followed on the 3rd of July, having allowed two clear pickings of *Crescent* before it came in. As picked for sale there is practically no difference noticeable between these varieties. The *Wilson* is slightly sourer and darker colored, the *Crescent* a little softer and not quite so rich; both kinds retail by dealers for “Prime *Wilson*” while the size is large, and job off for “Small *Wilson*s” when the size runs down. On sandy loam the *Crescent* appears the more productive, and increases its relative superiority as you plant on higher land, but on clay loam I would prefer *Wilson*. The two earlier pickings of *Crescent* make it much more profitable than *Wilson* on sandy soil; but the *Crescent* blossom is deficient in pollen, so that we plant every sixth row with *Wilson* or *Early Canada*, which have perfect blossoms.

The Bidwell gave us its first picking the day after *Wilson* came in. The berries show the usual defects of irregular shape, especially at first, greenness at the tip after the body of the berry is ripe, and lack of firmness for long shipment. But the plant grows double the size of *Wilson*, the foliage is remarkably healthy, the berry is much larger and sweeter, and the crop promises to exceed *Wilson* and *Crescent* per acre to even a greater extent than last year. We find that when people get used to the green tip they will ask for *Bidwell* in preference to others. This variety has given me the most profit of all from equal areas.

Seneca Queen came in about with *Bidwell*, perhaps a day earlier. It is also a magnificent sort for a near market. Last year I thought it decidedly behind *Bidwell* in productiveness: it may prove so this year before the season is over; but it certainly is well to the front just now. Like the *Bidwell* it makes a very large plant, but the foliage is darker and more upright. The

berry ripens up more evenly than Bidwell, is about equal in flavor and in firmness of texture, but is larger, really rivalling the famous Sharpless. The shape of the berry is just the opposite of Bidwell, being rather flat and very wide and circular, not a pretty shape you would think before seeing it, but the men say it sells best of all early varieties. About the 6th inst. we found Sharpless and Windsor Chief fit to pick. The former maintains pretty fairly its reputation of the *biggest* strawberry in the patch. But the crop seems to me only about half as large as Bidwell, and the big berries are rather soft, and of all shapes as usual. Still it will not do to pooh pooh the Sharpless; its size and sweetness must long keep it in favor; it is really a vigorous grower, and is not at all to be called unproductive. I have seen it bearing great crops on rich clay loam.

If vigor of growth, great productiveness of large and very smooth, handsome fruit was all we wanted in a strawberry, then, perhaps, the Windsor Chief would stand first of all. But we want a berry that tastes good, and that has some firmness, while this variety is both soft and sour with a flattish, half-smoky flavor thrown in. Yet it sells so well, with its beautiful gloss and fine size, and it keeps in heavy bearing so long that it is quite profitable. Leave it on the plant till it is nearly black with ripeness and it tastes very good indeed, in the absence of other sorts. Blossom imperfect.

Longfellow, planted in every sixth row among Windsor Chief, to pollinize it, is a most utter failure. It grows well enough, and the berries are large and delicious, but I think a row of a hundred plants does not contain as much fruit as I can find on *three* plants of Windsor Chief.

About with Bidwell and Windsor Chief began to ripen all remaining

varieties on the place, except Manchester, James Vick, Atlantic, Jersey Queen and Marvin. The latter has not ripened a berry yet. The others just mentioned have just come in, and will be described in due order. First let us notice some of the newer varieties.

Moodna, *Polopel*, *Legal Tender*, *Nigh's Superb*, *Vineland*, *Grand Duke*, and *Belle*, do not appear of any special value on my place. The first two seem quite unproductive; *Legal Tender* bears pretty well, but is rough in outline (seeds deeply sunk), and is inferior to many old kinds; ditto *Vineland* and *Nigh's Superb*; and *Grand Duke* is too aristocratic, with his smooth rich berries, to do much without very rich soil and careful petting; so also the *Belle*. Let us drop from sight, and try hard to forget, all new sorts that are not superior to old varieties in important particulars.

Cornelia is a fine large berry, quite firm too, but rather acid. It seems to go in for fruiting vigorously, and it makes a fine plant; but I mangled the roots too sorely in taking up young plants to let it have a fair chance. It is certainly promising, but I feel as if I don't know enough about it to praise it much.

Prince of Berries is a most interesting member of a high-toned family from New Jersey. The Great American, I think, was the first of the strain that I became acquainted with—it was a *dude* that would barely average three berries to the plant! Another of the family, the *Essex Beauty*, attained a temporary celebrity, but I fought shy of the breed till the Jersey Queen tempted me with an extra flourish of trumpets. The Jersey Queen was really good, nearly as large as Sharpless, and truly delicious, while with good cultivation it would bear fairly. In the Prince of Berries this aristocratic line has made a still nearer approach to the wants of

the people. The Prince of Berries is a fair grower, bears more, I think, than Jersey Queen, and though not so large, has the further superiority of perfect blossoms and greater firmness, while it impresses me as the most delicious berry I have ever eaten. Yet it is a berry for a gentleman's garden. Those who grow strawberries mainly for the quantity of fruit will do well to let it alone. I am so interested in the behavior of this variety that I hope the originator will go on with his work of raising new varieties till he gets the fine flavor of his seedlings down to the level of the people's gardens as to productiveness.

Atlanti has ripened a few fine berries of good color and quite firm; but it is quite late, and so I cannot say much about it. It sets a large quantity of fruit, which, if a fair proportion ripens up to good size, must establish its character for productiveness. The berry is about the shape and size of Bidwell, but it ripens up without the "green tip." I regard this variety as quite promising.

Of all new varieties—previous to introductions of this season, which, of course, I have not tested—I am most impressed with the value of the *Lacon*. Not that it is so very large, or so very handsome, or so delicious; but it combines *above the average* of these points with about the highest degree of vigor, health and productiveness, that I have seen. The berry is conical, about the shape of a large Wilson, but not so irregular as the largest specimens of Wilson. Color very like Wilson when Wilson first reddens and is fit to pick, but it stays that color, instead of assuming the dull dark tint of fully ripened Wilson. Size about equal to Bidwell, or say half-way between Wilson and Sharpless. Flavor about as rich as Wilson (the Wilson is really a richly-flavored berry), with a little more sugar

than Wilson when Wilson is at its best. My fruiting plants are between rows of black currant bushes which are six feet apart. There, starved by the roots of the currants, and weakened by all the plants possible having been propagated and removed, to the mangling of root growth, during both 1883 and 1884, it yet makes about the largest plants on the place, covers itself with blossoms and faithfully develops them into berries such as above described. How can a plant do more, and what more is needed for a commoner's strawberry patch! Furthermore, why is it that some nurserymen cannot stop from puffing up their novelties to give this choice sort its just meed of praise? Of course there is not so much money per dozen in selling *Lacon*, but then it pays to sell the people a really good thing. I must not omit to remark that the *Lacon* does not seem firm enough for long shipment—hardly up to *Crescent*, perhaps, in this respect; and it is not so smooth and glossy as *Wilson*. But I believe it will sell better for home market, and I shall be surprised if it does not outyield *Bidwell* or *Crescent*.

Mrs. Garfield bears a pretty berry, but will not grow well for me, and yields poorly.

Daniel Boone grows well, and bears freely of large, handsome, moderately firm, rather acid berries. It is a better variety with me than many others, but does not reach the front rank.

Arnold's Pride has done a great deal better for me this year than ever before. I think it rather insipid, but it is certainly very large, and the few plants left from the destruction with which I visited so many have really set a great crop. It makes a large plant, and the berry is very handsome.

Muggie, a sister of the last named, sets, as usual, more fruit than it can carry to maturity. The plant is about

the size of Wilson, and I think it bears a little more, but the fruit is rather rough and unattractive. It deserves a better chance also.

James Vick has not yet received a fair trial with me. I was so anxious to get all the plants I could, that I suffered the runners all to grow; and, thus encouraged, it forms more strong young plants than I have seen made by any other variety. The taking up of these, or in some places the hoeing of them out, of course injured the roots to the shortening of the supply of sap. Certainly no plant could mature a large crop of fruit under such circumstances. Yet nothing seems to discourage the *James Vick* from the attempt. Every plant covered itself with blossoms, and persists in putting out new blossoms for a whole month. I could not expect berries of any size under such conditions. Here and there I got one an inch and a quarter in diameter, but I am utterly unable from experience to give a fair idea of the normal size of this variety. But the size is the only questionable point. It is one of the handsomest berries—uniform in shape, smooth in outline, bright in color; and it is a very strong healthy grower, and remarkably productive, setting far more fruit than Wilson. It ripened with me about four or five days after Wilson began. I think it *firmer* than Wilson.

Manchester stands again about head of the class in value. It began to ripen about with *James Vick*, or say July 8th, and so it is too early to say how the berries will hold out in size; but in respect of size, so far, it seems to be outdoing even its fine record of last year. Why I have hardly ever seen a *Sharpless* that would excel the first specimens of *Manchester* in bulk. True, scattered specimens of *Sharpless* would measure more in diameter or circumference, and now and then one will weigh an ounce and a half; but

here, on almost every plant, are *Manchesters* that would crowd the weight of all, but the one or two selected *Sharpless*. I have never seen anything average so large as these *Manchesters* on rich loam, and the quality tastes better to me than *Bidwell* or *Sharpless*. I do not consider the *Manchester* a good shipper, though it may travel a little better than *Bidwell*. The color is a shade too light to suit me, but most people do not mind. Productiveness about like *Crescent*. It is very smooth and regular.

Junbo appears to be only *Cumberland Triumph* with a new name.

Park Beauty is just *Crescent* rechristened.

Jockey Cap and *Howell* also appear to be old sorts out with new names. It may be too soon to judge from specimens grown on plants set this spring. But in color, shape, texture and quality, as well as in habits of growth, *Jockey Cap* too much resembles the old *Miner's Prolific*, and *Howell* the old *Jucunda*, for me to have much interest left in either of them.

Parry, set out this spring, bore a few berries, that were very large for such young plants, firm, and exceedingly glossy and handsome. The flavor also was excellent, and if the *Parry* can do much of that sort of thing when full grown, there are lots of varieties that will have to get out of the way for it.

Beyond all doubt the most beautiful berry I have seen, grew this year on a new variety which I got from New Jersey this spring, and which is to be sent out next fall (this midsummer in fact) by Mr. J. T. Lovett, with a flourish of trumpets, I suppose, that will leave my praise of it in the rear. Well, anyway, the fruit was about an inch and a quarter long (large for a plant only set this spring) about the shape of the best formed berries of *Atlantic* shown in the colored plate

issued in the *Horticulturist* some months ago, and of the most attractive tint of rosy-scarlet upon a glossy surface like wax. If I could only know how productive it is it would be well worth my while to say so perhaps; but I must wait another year for that. The plant is a fine, strong grower with handsome foliage.

Other novelties this spring, such as Daisy Miller, May King, Sucker State, &c., have not fruited yet, so I must not criticise them.

I trust other growers will not hesitate to give the results of their experience with varieties this year. By thus exchanging conclusions we are certain to gain in knowing what to reject as well as what to plant.

I am sorry that the stage of ripening of my crop will not permit greater accuracy in describing my own observations in this paper.

THE LOCUST TREE.

BY L. WOOLVERTON.

Probably in no part of Ontario are there finer specimens of the "Locust" tree than about Grimsby. The writer has seven magnificent specimens in front of his lawn, which he would not part with for any money. Planted some forty or fifty years ago they now tower up to a height of fifty or sixty feet, like giant sentinels on guard, or like the columns of some huge temple. Any other tree would hide from view the lovely mountain side across the way, but the tall leafless trunk of the locust gives most interesting glimpses of the beautiful landscape.

This tree is a native of North America, but since its discovery in the early part of the seventeenth century immense numbers have been planted in England and on the Continent, and it is much valued as an ornamental tree. The first seeds were sent to France in the year 1635, and the botanical name

Robinia was given the genus from Vespasian Robin, who first cultivated it in Europe. The specific name *Pseudacacia* means False Acacia; the name Acacia having been first given through a mistaken notion that it was similar to the Egyptian Acacia, because of its prickles, and the resemblance of its leaves.

Its common name, Locust tree, was given it from a notion that it was the tree so-called in Scripture.

The white, or yellow, flowers are very numerous, and are called papilionaceous, from their fancied resemblance to a butterfly; they hang in showy racemes, and are very fragrant. At the time of writing (23rd June) the air is laden with their perfume which is "too sweet by half," like some people, but it is not wasted for the bees are most industriously transforming it into honey.

The ovate leaves are arranged along a common petiole in such a way as to give rise to the term *odd-pinnate*. They have a peculiar habit of folding over each other at night, and it is said that a child, who had noticed this habit once said, "It is not bedtime yet, for the Acacia has not begun its prayers."

There are some objections to the tree for lawn planting. Its deep corrugated bark is not pretty, though peculiar; the branches are very brittle, and are frequently broken by the wind, strewing the lawn with fragments; the foliage appears very late in the spring, and falls very early in autumn, giving much rubbish for raking, and suckers are almost sure to appear wherever the ground is broken up by a plough or spade.

It is a most useful timber tree, and grows with astonishing rapidity, forming heart wood at a very early age. No wood excels it for certain purposes, being more durable than that of any other tree, unless it be the Yew. Stakes

made of acacia wood have been known to stand exposure for a hundred years; and, when shipbuilders wish to use wooden pins in place of iron bolts, they select acacia wood, and call the pins tree-nails. No wood is so valuable for posts, hoops, cog-wheels, or carriage axles.

The North American locust tree is not so very long-lived; but Von Martius, a traveller, states that in the South American forest he found the Great Locust Tree, a variety that lives to an age of three or four thousand years. He speaks of one specimen so lofty that the forms of the leaves could not be made out, and having a trunk so immense that fifteen Indians with outstretched arms could only just embrace one of them.

In some parts of the country the locust tree borer (*clytus robiniae*) has done great damage. It is one of the long-horned beetles, and may frequently be found upon the Golden-rod; it may be identified by the peculiar markings of its back, where at the base of the wing-covers a figure like W is easily discernable. In some sections the locust tree cannot be grown on account of this borer, but at Grimsby it flourishes thus far in spite of him, and is the admiration of travellers who are at all interested in arboriculture.

PLUMS AT PORTSMOUTH.

I have about 100 plum trees grown from suckers, some about ten years old. The fruit is red. Large size, fine for dessert or cooking. Trees very hardy, fast growers, and free from knots. Trees grown on strong clay soil. I will send a sample of the above to the Fruit Growers' Association the first opportunity.

Yours truly,

S. N. WATTS.

Portsmouth, Ont.

STRAWBERRIES.

Strawberry plants have come through the winter in splendid condition. Of the new varieties, Connecticut Queen appears to be the most hardy; in fact, no other variety, either new or old, has withstood the winter as well. Should it prove to be productive, firm, and of good size, it will be a valuable addition to the list.

Mrs. Garfield was injured most of any by the winter, although it is picking up well now.

In the May number of the *Horticulturist* T. C. Robinson gives a good article on "hill culture" of strawberries, and asks those of the "matted row leanings to speak up." As I belong to that class, I will have to "speak up."

My object in growing strawberries for market is to make money, and the method that will give me the greatest net returns for expenditure in labour, etc., is the method I will follow. For my section of the country, that is the "matted row system."

Mr. Robinson will no doubt succeed in his locality with the "hill system," where they nearly always have the plants well covered during the coldest part of winter. He can also grow and fruit Taylor's Prolific Blackberry, while with me they kill down so far every winter that I have never been able to get a pint of fruit from it. My soil is a strong clay loam, and when I grow in hills they often kill out during the severe cold of winter and freezing and thawing of early spring to such an extent that the crop is not nearly so large as from those grown in matted rows right by the side of them.

There is no doubt but finer fruit can be grown by the "hill system," where they are well protected either by snow or heavy mulching, especially on light soil; but the labour required to keep the runners cut adds so much to the expense of growing, together with the

danger of losing them by cold of winter and ravages of the white grub, that I am convinced I can grow more fruit for the same money by the "matted row system."

The only way the question can be decided is for each one to test both ways for himself, as locality, varieties grown, soil, market you wish to supply, and many other questions have to be taken into consideration. Hence, my advice would be, to plant most of them in matted rows, with a few in hills for trial, and the way you can make most out of them one year with another will be the best for you.

W. W. HILBORN.

Arkona, May 29th, 1885.

THE RUSSIAN MULBERRY.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

DEAR SIR,—Samples of the fruit of the Russian Mulberry were brought to me to-day by Mr. W. S. Short, 114 York street, London, gathered from a tree planted by him three years ago. This tree has during this time grown to be about eight feet high and has had a crop this year of six or eight quarts on it. It had not shown any sign of tenderness until last winter when the new wood was killed back from one to two feet. The tree made a vigorous wood growth late in the season which Mr. Short thinks may account for the winter killing last year.

The fruit is black, about the size of the common wild blackberry, juicy, sweet, and of a pleasant, rather sprightly flavor. It is an agreeable fruit to eat, and would I believe be good also for cooking. The crop on the tree referred to is now nearly all gathered, while on a second tree grown by Mr. Short the berries are only just beginning to ripen. If it is found that the Russian Mulberry produces gener-

ally fruit equal to the sample referred to, I do not think that anyone will regret growing it.

Yours truly,

WM. SAUNDERS.

London, Ont., July 9, 1885.

ABOUT MAXIMS AND PROVERBS.

BY PETER PRUNING KNIFE.

It has been said that the man who causes two blades of grass to grow where only one grew before, is a "benefactor of his country." The above don't apply to *Quack Grass* or Canada Thistles.

Trim up a tree in the way it should grow, and when it is old it will not require trimming. As the twig is bent the tree is inclined. This don't mean that you can grow scythe sticks, ox yokes and apples on the same tree with profit.

To grow good corn, give it plenty of room. To prevent corns getting pinched, have large (souls) and corresponding uppers, and keep your feet in the right path.

If fruit growers get the same measure they mete, they won't require the Imperial quart when they are paid off.

FRUIT PROSPECTS IN GREY.

We have had a hard winter. Peach trees have suffered much. Pears and grapes will be a good crop. Strawberries and small fruits look well. I put a Glass seedling graft on a sloe thorn when we got the tree, and it has borne heavy and broken down every year, and what was left was heavy blossomed this year, and nothing seems to hurt it. Apples will be a good crop.

Yours truly,

WILLIAM BROWN.

Annan, June 15th, 1885.

THE LEAF AS A STUDY.

At a meeting of the Massachusetts Horticultural Society, Dr. G. Austin Bowen, of Woodstock, Conn., read a paper on "The Leaf as a Study." After speaking of the apparent insignificance, to general view, of a leaf, he passed to the consideration of it from the point of view of the physiologist, who looks on it as a part of matter having its function to perform, and its relationship to other great creative powers of nature. Before we have the leaf we have the bud, which consists of a brief cone-shaped axis with a tender growing point, bearing a protective covering of imbricated scales and incipient leaves. Within this bud the botanist will point out the rudimentary leaf and bud envelopes, and classifies with the greatest minuteness the various characters therein presented. A day could be profitably spent with him in considering the vernalization of the bud. With the coming of spring the bud swells and throws off its now useless scales, and we have the miniature leaf, tender in its fibre, delicate in its tracery of outline, and beautiful beyond the painter's art in its softened coloring. A few days of warm sunshine, and every shrub and tree is loaded with verdure; hundreds of thousands of tons of foliage have appeared—from whence? The leaf is fullgrown, and from now to fall carries on its peculiar functions, which present questions of intense interest to the student of Nature.

Anatomically considered the leaf is an expanded portion of the substance of the bark, extended into a broad, thin plate, by means of a woody framework or skeleton, issuing from the inner part of the stem, and called the lamina, or blade of the leaf, and consisting of two parts, the framework and the parenchyma. The framework is made up from the branching vessels of the footstalk, which are woody tubes,

pervading the parenchyma, and carrying nourishment to every part. From the analogy of their functions these vessels are called veins. The parenchyma consists of two parts, or strata, more or less distinct, and arranged differently in leaves, whose natural position is horizontal or vertical. Externally the leaf is covered with a layer of empty united cells, mostly tubular, forming a superficial membrane, called the epidermis, and is analogous to the cuticle that covers our own bodies; its office in the leaf is to check evaporation. The portion of the parenchyma immediately beneath the epidermis—the upper side, or that which faces the sun—is composed of one or two layers of oblong cells placed perpendicularly to the surface, and more compact than the layer of cells beneath them, which constitutes the lower stratum, and which also contains, in common with the whole epidermis, the stomata or mouths, which are little clefts through the epidermis, and are always placed over and communicate with the inter-cellular passages. These little openings are guarded by valves, which are supposed to regulate transpiration. The number of these stomata is astonishing; a single square inch of surface of the leaf of our common garden rhubarb contains 5,000, the garden iris 12,000, the pink 36,000, and the hydrangea 160,000. Our leaf also possesses glands, which are cellular structures serving to elaborate and contain the peculiar secretions of the plant, such as aromatic oils, resins, honey, poisons, etc.

The beautiful green of the leaf, so restful to the eye, is a waxy substance, termed chlorophyl; which floats in the fluid in the cells as minute granules. The light of the sun seems to be essential to its formation. Although found in vast abundance in the vegetable kingdom, hundreds of tons being everywhere around us in the growing season.

chemists can tell us very little about it. They have not yet ascertained its component elements, and cannot tell whether it contains iron or nitrogen; but can only say that it is never produced in the absence of compounds capable of supplying these elements. It is possible that it may consist of more than one substance, or that the leaf green of all plants may not be identical in every respect. Chlorophyl is found in those cells of plants where the absorption and decomposition of carbonic acid gas goes on, with which process of vegetable life it is closely connected.

A second coloring matter is found common also to fruits and flowers, as in the leaves of the red cabbage, the skin of the grape, and in the dahlia, and is called *colein*, from *Coleus*, a genus of plants in many species of which it occurs abundantly. It is very irregularly distributed, and might be called one of the curiosities of the leaf, as it has no important offices to fulfill therein. In chemical composition it is identical with the coloring matter of red wine, most red, blue and purple flowers and fruits, and the red pigment of some of the varieties of the beech. It should not be confounded with the coloring material of the well-known madder, so long used to dye Turkey red, which is a principle of the root and not the leaf—at least it is never stored in the leaf.

Thus we have the leaf, beautiful in its design, elaborate in its construction, presenting the same general characters, whether grown on the land, in the air, or in the water, and varying from the diminutive leaf, almost microscopic, to that of the renowned *Victoria regia*, which in the waters of its native Guiana presents a surface of from eight to twelve or even fifteen feet in diameter. The attenuated leaves of the far Northern forests, counterbalanced by the profuse unfolding of those of the heated tropics, with their unending variety of form and

coloring, and anomalies of structure and habit, all give us the same physiological conditions, which, briefly stated, are as follows, and are all included within the term aeration, or respiration, which is of the same vital importance to the vegetable world as it is to the animal:

First—The absorption of carbonic acid from the air under the stimulating influence of the sun's light.

Second—The absorption of oxygen when the influence of the sun's light is obscured or removed.

Third—The formation of carbonic acid by the union of this oxygen with the free or nascent carbon already in the tissues.

Fourth—The assimilation of carbonic acid from whatever source it may be derived, which process, under the sun's light, decomposes the carbonic acid, retaining the carbon, and

Fifth—One of the greatest functions of the leaf, eliminating the oxygen.

Sixth—The exhalation of carbonic acid when the sun's rays are obscured or darkness prevails.

Seventh—The reduction of the volume of sap by transpiration.

We see by this enumeration that there are two phases of respiration, seemingly directly opposed to each other, and evidently occasioned by the light and heat of the sun. Surely we ought to derive satisfaction from the thought that as we till our fields during the intense heat of the summer sun, the same sunlight that exhausts us is giving us more oxygen to breathe, and is storing up food for our future sustenance in the plant we cultivate. The thought may not render the toil less fatiguing, but the consolation comes from the knowledge that we shall get the upper hand of Nature when we harvest the crop.

To understand the full office of the leaf we must know that the sap which

flows so freely in the spring is composed largely of water absorbed by the roots of the plant. This water holds in solution minute quantities of gas and mineral salts, and adds thereto, on its upward way, dextrine and sugar, which it dissolves out of the cells as it comes in contact with them, gaining in density as it nears the leaf. Within the leaf it parts with much of its water, having no longer a use therefor, receiving in its place carbon and the digested juices acted upon by the chlorophyl, as it passes through the surface of the leaf, thence by the leaf stalk into the cellular and woody tissues of the bark, and continuing its downward passage, making deposits of food first in the cells of the pith, at the base of every incipient bud, then a copious store in the cambium regions, giving also a good portion to the medullary rays, some to be carried outward to the cortical layer, and some onward for solidifying the wood, and, lastly, the richest portion is sent to the root, every branch and fibre being filled. The return sap also contains nitrogen to a limited extent, and minute portions of mineral matter. From this nitrogen is first organized the protein substances analogous in composition to the living tissues of animals, and cellulose, the peculiar principle of vegetable tissue, having in it the exact elements of water. The action of chlorophyl upon this substance develops gum, sugar and starch, which are nutritive products common to all plants, and are stored away for future use, as fat is stored away in our own and all animal systems. As examples, we have sugar stored up in the root of the beet and in the stalks of corn, sugar-cane and sorghum, and starch in the tubers of the potato. These substances, with cellulose, are all composed of carbon with the elements of water, often in identical proportions, and are easily converted into one another.

The leaf is not alone an interesting study because curious, but it has had no little part in rendering the world habitable for man. If this consisted only of the mineral portion it would be only a rocky desert, but mingled with the mineral we find the organic matter, which consists of the remains of former tribes of plants and animals, and the products of this decomposition, carbonic acid and ammonia. But as this earth supported vegetable life before it did animal existence, we see the important place given to our little leaf. Age after age it went on elaborating the juices of plants, leaving for the final decay that comes to all to add their organisms to the soil, making it such as we have it to-day, a life-supporting element, giving occupation to a large majority of civilized men.

But it is not soil alone that has been created by the instrumentality of our hastily surveyed leaf. The stores of coal and petroleum, enough to last for centuries to come, were formed from gigantic pines, ferns and lycopods, which were developed through the agency of leaves. It is probable that at the epoch of growth of these enormous primeval forests the atmosphere was much more highly charged with carbonic acid than now, and that from this source the gigantic lycopods, ferns and conifers were developed, thus converting into organized products an immense amount of carbonic acid which had previously been liberated by some change in the mineral world, and by its removal from the atmosphere the earth was prepared for the residence of a higher class of animals than had previously existed. It is regarded by scientists as a fixed fact that the whole vast accumulation of carbon now in the earth was at one time a component part of the atmosphere.

In answer to the practical question how farmers and horticulturists are to

be benefited by a knowledge of leaf physiology, the essayist spoke of the protection against drought derived from the leaves of the forest, which protect the ground from the parching effect of the sunlight and from drying winds, making the forest soil reservoirs for water, which in times of drought keep the streams well fed. But in the opinion of the essayist the moisture transpired from the leaves affords a stronger reason why these leaf treasuries, as forests might be termed, should be carefully guarded. According to Johnston, the English agricultural chemist, a field in grain or grass will transpire from three to five million pounds of water in a season's growth, and if all this evaporated water could be returned in the shape of rain, it would amount to an inch and a half or two inches. If one acre of land in grass can give such a wonderful result, what will be the effect of large tracts devoted to forestry? The leaves of aquatic plants in no small degree contribute to the purification of the waters where they grow.

The carbon, or charcoal, derived from the decay of plants is of the highest utility to vegetation, as an absorbent of water and fertilizing matter. It also by its dark color absorbs heat from the air. The decay of vegetable matter always evolves heat, which the rootlets of growing plants realize and respond to, though it may not be sensible to our feelings.

The grasses of the world—more than six thousand species—or nearly one-sixth of all the flowering plants, come legitimately within the subject of this paper. The grass crop is the leading crop in New England, and all that pertains to it should be carefully considered. The leading point is that the leaf, when grown, never changes its form or size, and that when quickly grown its size is far larger than when its formation is

slower. Hence, would we have large grass we must grow it quickly, producing a large leaf, valuable not alone for itself, but because it also adds to the value of the stem.

The fruit culturist will thoroughly consider the subject of pruning in its relation to the proportionate capacity of the leaf to the plant and the fruit, and will guard his knife accordingly.

THE ONION MAGGOT.

Miss E. A. Ormerod, an English lady of considerable note as an entomologist, says of this pest:—

"The amount of damage to onion crops from the maggot is frequently so great that for some years I have been experimenting on the subject. I found that the fly (when it could) laid its eggs on some exposed part of the bulb, often almost beneath it, which in common onion practice the exposed state of the bulb allows. On noticing this, about three years ago, I covered a plant up to the neck of the bulbs, and next morning found fly eggs deposited on the onion leaves, and dropped at hazard on the ground—where they perished, and the onions, being saved from attack, did well. The following year I had some part of the crop in rows earthed up with success. The onions were firm and sweet, and though not as thoroughly protected by the rough earthing up as by my own hand dressing, it answered to some extent, and the onions in many cases were not injured, or grew past attack from being in favorable condition. This year I had a trench prepared as if for celery, and had the onions sown along the bottom, and as they grew the sides of the trench were filled in on the bulbs. They grew extremely well, notably better than those in the bed alongside, and on raising them to-day I find them sound and fine bulbs, very free from

any mark of insect injury. I venture to submit the plan of growing to your inspection, as though it probably could not be brought to bear in field use, it appears available for garden growth, and especially for cottage gardens, where there is only a small quantity of ground, and where the loss of the little crop is a serious lessening of comfort to the family."

THE MARECHAL NIEL ROSE.

The following story of the origin and christening of this famous rose is clipped from the *Floral World*. Like many a bit of charming romance it will not bear the clear light of day, since this lovely rose first appeared on earth in 1864. Nevertheless it is a well-written conceit:—

"In 1859, while in Italy commanding the Third Army Corps, its commander, Neil, was created a Marshal of France when the peace of Paris was made. He remained in Italy after the army had returned to France. General Neil, as his name implies, came of one of those Irish noble families who emigrated to France after the death of Charles I. He was in feeble health at the time I speak of, having suffered with wounds and that deadly fever of the Italian marshes. One day a peasant woman brought him a whole basket of roses, of which he was extremely fond, from the Campagna region. They were new to him, and thus served to amuse him until they were withered. He observed, however, that one particular shoot had not faded and died, like the others, but had grown into a beautiful green shoot of perhaps ten inches in length. When he looked to see why this one had grown and the others faded, he found that a bit of the root had been cut away with the flower, which was a single-leaved wild rose of the marshes, and palish yellow

in hue. Hardly knowing why, Neil determined to keep the shoot so curiously preserved, and next spring it bore four of the loveliest buds in the world, of a pale lemon tinge. Just then Neil was sent for to receive the highest military rank then known to Europe, the Grand Cross of the Legion, and his commission as Marshal of France, in presence of three emperors and all the kings in Europe worth naming. After the solemn ceremony was ended, and he wore for the first time on that day the Grand Cross of the Legion of Honor, he went to the Empress—who was splendid in her perfection of beauty—and presented to her a curious yellowish rose of perfect form and perfume, but different from any she had ever seen, and told her its story.

"And so you have proved the truth of what the old Abbe used to say in his dreadfully tedious sermons at Pau about casting bread on the waters," said the Empress to the handsomest and most daring, as well as one of the ablest, of the Marshals of the Second Empire. "Dear me, but he was tedious, that good Abbe," continued the Empress, with the softest look of retrospection in her lovely dark eyes. "Now, *Monsieur le Marechal*," said she, vivaciously, "I shall christen this rose for you." "Do so," said the Franco-Irish soldier, bowing very low, but flashing at her a glance of profound admiration. Lightly putting the rose to her lips, she said: "It is named the Marechal Neil for the soldier *sans peur et sans reproche*, as gallant in the salon as he is on the battle field." This gracious speech went straight to the great soldier's Irish heart. "You will wear it to-night, your Majesty, will you not, and afterward give it me to keep, this happy rose?" "*Monsieur le Marechal*!" said the Empress, with great dignity. "I pray your forgiveness," he answered. "No, no; I am not as angry as I ought

to be," she replied, "but—but—people *might* hear." And thus it is that since that gracious day in 1859 until now, the rose which is in the first rank for romance and beauty has been called "the Marechal Neil."

A SCHOOL OF GARDENING.

Near the little village of St. Osso, which lies at the foot of the Mount Sumano, one of the most interesting localities in Europe to lovers of Alpine flowers, a horticultural school on a magnificent scale was founded last year by Senator Rossi, an enthusiastic amateur. The amount of land devoted to this purpose is about five thousand acres, the whole of which is encompassed by walls. Nothing seems to have been neglected to render this model pomological and horticultural farm, as the founder terms it, a success. Thus there are houses for the workmen, covered places for soils and manure, immense reservoirs for water, glass houses of all kinds, including an extensive range for grape-forcing, a chemical laboratory, museum, class-rooms, semi-subterranean rooms for preserving fruits and vegetables and extensive piggeries for making manure. The system of irrigation is very thorough, the ground being portioned out into squares of 3,260 feet, divided by roads, along the borders of which flow streams of water that form channels of transport. Electric lights are distributed in every part of the grounds, so that any kind of work, such as transplanting, which it would be difficult to perform satisfactorily in the daytime may be accomplished at night. The whole of the soil has been trenched to the depth of one yard. There are 8,000 square yards of wall for espalier fruits, 1,500 acres of eating grapes, which a reservoir containing 1,200 cubic yards of water and the continual flow from Mount Sumano guarantee against drought; a vineyard

containing 50,000 vines, a fruit garden of 30,000 trees, a trial ground of 200 acres, and some 300 acres of asparagus. Accommodation is provided for ninety pupils, some of whom will be maintained at their own expense, while others will receive a subsidy from the various communes and provinces of which they may be natives.—*Floral World*.

THE CODLIN MOTH.

In my practice I have discovered how to destroy easily this insect in such numbers that it is no longer a pest; but I have never made this method known outside of the circle in which I live. I was instructed by a friend to place sweetened water on the bee stand to catch the bee moth. I did so, and went the next morning and found six moths, but from examination they proved to be the collin moth. I then determined to try an experiment to catch codlin moths, and in the evening a basin of sweetened water was hung on a limb of a Harvest Apple tree; to my joy and surprise I found, next morning, the liquid in the basin was completely covered with codlin moths. I at once ordered the tinsmith to make me thirty-five or forty basins, holding a trifle over a pint each, with wire bales by which to hang them up.

The place selected to hang the basins should be open and easy of access. No more liquid should be prepared than is needed for immediate use, for if kept it will lose its ripe apple or new cider smell and taste. For thirty or thirty-five basins, take a gallon of rain water and sweeten it, and then add a little vinegar to give it aroma, for it is the ripe apple or cider smell that attracts the moths to their liquid graves. I think Sorghum molasses is best for sweetening. The time for commencing the use of the bath will depend on the season, somewhere from first to the

fifteenth of May, and it should be continued until July, when the first brood of moths will have been captured.—*From a prize Essay in Vick's Magazine for May.*—[NOTE BY EDITOR OF CANADIAN HORTICULTURIST.—We doubt the catching of Codlin Moth in this way. The Canadian species are not thus caught.]

PROFIT IN FRUIT RAISING.

With all the tons of Grapes raised, how is it there is not a gallon of Grape syrup to be had for love or money in market? If you don't know that Grape juice boiled down to a clear syrup is the most relishing thing in sickness or health, for consumptives and to keep people from getting consumptive, to be eaten as food or diluted for drink, that would banish wine sooner than the temperance societies, you have something to learn. This article, once known, would prevent all danger of an over-crop of Grapes, for it would be made and kept by the barrel, and exported for use in all climates. The new production of cider jelly, which is merely cider boiled down, without any addition till it is a solid, dark jelly, is a great gift to the housekeeper, and will be the salvation of the Apple orchards. What if Apples are fifty cents a barrel in October? Set the cider mills going, and the huge enameled evaporating pans. Perhaps cider jelly at twelve cents a pound will pay you, as there is no sugar to be used.—*SUSAN POWER in Vick's Magazine.*

NORTH WINDOWS.—To those who have only north windows which are available for growing plants, I would recommend the Chinese Primrose. This is, everything considered, the best winter bloomer for sunless windows that I know of, and can be relied on for a constant supply of flowers from November until "Nature awakes from her long sleep."—*Vick's Magazine.*

MAINE'S APPLE SHIPMENTS.

The city of Portland has now become the third port in importance for the shipping of apples of any place in America, as appears from statistics gathered by the *New England Grocer*. The shipments of apples from Portland to Europe had not been very large until the past winter, when two or three enterprising shippers took hold of the business and gave it a great impetus. It is now definitely settled that Maine apples can be successfully forwarded to Europe from a Maine port, and that it is not necessary to send them to Boston.

The total shipments of apples from the port of Portland from the opening of the season to date were 91,483 barrels, 52,497 barrels of which were carried out by the Allan line, and 33,987 barrels by the Dominion line. All these were not Maine apples, however, as thousands of barrels of fruit grown in Canada were brought to Portland by the Grand Trunk for shipment from that port. Of the total shipments, 62,974 barrels were Maine apples, and 28,509 barrels Canadian fruit. These figures come from an official source.

The following table, giving the shipments from the leading ports for the season ending April 25th, will show that Portland is now the third apple port on the continent, Boston being the first and New York the second:—

Boston—shipments.....	308,118 barrels.
New York "	254,530 "
Portland "	91,483 "
Montreal "	85,479 "
Halifax "	26,076 "
Annapolis "	8,612 "

Total 784,295 barrels.

So Europe has consumed 784,295 barrels of American apples the past season. Of this total, 508,813 barrels went to Liverpool, the great apple mart of England, 116,226 to London, 140,875 to Glasgow, 102 to Hamburg, 586 to

Newcastle, 2,244 to Hull, and the balance to other ports in small lots.

The 62,974 barrels of Maine apples shipped from Portland to Europe do not begin to represent the total Maine exportation. Thousands of barrels have been carried by Portland to Boston for shipment. One buyer at Bridgton has forwarded 5,000 barrels, and there may be other buyers who have sent more, but his shipments afford a hint of the extent of the business. Of the 308,118 barrels exported from Boston, a large per centage was Maine fruit. The *Grocer* thinks it is probably striking under, rather than over, the actual figures to estimate the total number of barrels of Maine apples exported since last fall at two hundred thousand.

Averaging the price which the farmers received for this fruit in their cellars at \$1 60 per barrel—which Mr. Isaac Berry, of Messrs. I. Berry & Bro., Portland, the leading Maine shippers, thinks is about right—then the very comfortable sum of \$320,000 was received by Maine farmers for the 200,000 barrels which they furnished to Europe.

The reason why more Maine apples are shipped from Boston than from Portland is the difference in freight, which has been nearly a shilling less from the former than from the Maine port. Portland rates have run from 2s. 6d. to 3s. a barrel.—*Home Farm.*

TRANSACTIONS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY for the year 1884, Part II., have just been received from Mr. Robert Manning, Secretary. From it we learn that the display of plums at the Society's Exhibitions has steadily increased for several years, hence we infer that more attention is being paid to the cultivation of this fruit than formerly.

MARKET GARDENING IN THE WEST.

As a rule the cheapest manures are not the best. The competition is very keen, and you can now get fertilizers at quite reasonable prices in proportion to their real value. But can not you buy stable manure at a cheap rate? To grow celery plants, you can probably use artificial fertilizers to advantage. But for growing the crop itself, plenty of well-rotted stable manure should be your main reliance. If you had a slough that is well-drained two and a half to three feet deep, with a supply of water in August within two feet of the surface, then you could raise celery to perfection and at small cost. Celery is a semi-aquatic plant. If you cannot get the moist land, you must depend on an extra dose of manure that will, by decomposition, furnish plenty of nitrates. A supply of nitrates to a considerable extent is equivalent to a supply of water. The same remarks will apply to cabbages. For raising the plants, or for very early cabbages, artificial fertilizers may prove profitable, but for the main crop, stable manure ought to be sufficient. Do not plant too close, Cabbages pump up a great deal of water out of the soil and evaporate it through their leaves.

If you have a limited supply of water, as you undoubtedly have, it is unwise to have too many pumps. Some of them will soon "suck air," and run down, others that go deeper will hold on longer. The fewer the pumps the better will it be for you when the dry weather comes. How to conserve water in the soil is an important question for the market-gardener. Heavy manuring on the one hand and thorough cultivation and no weeds on the other hand, are the principal factors—and if you have five cabbages with only moisture enough for three, two of them are weeds.—JOSEPH HARRIS in *American Agriculturist* for March.

FLAMEN POMONALIS.

(Read at the Meeting of the Maine State Pomological Society, at Gardiner.)

BY J. M. LAERABEE.

In ancient days of myth and gnome,
When gods and goddesses in Rome,—
With temples numerous and grand,
And altars crowned on every hand,—
Held sway : When nymphs with thoughtful
care,

In human labors had a share,
And loved and were beloved in turn,—
As human hearts for love light yearn,—
Pomona, fairest of her race,
Among the fruit trees held a place,
And from her garden, orchard, field
Produced by skill the highest yield ;
And while she helped with cultured hand
The growing products of her land,
Or gathered fruits in garners laid
For future use ; this virtuous maid
Determined in her heart that she
A celbate for life would be.
So shutting up her garden gate,
The young gods left outside to wait.

Vertumnus, sought by human guise
This beauteous goddess to surprise,
And many a cunning scheme he planned
To win her virgin heart and hand.
Sometimes a reaper lad was he ;
Again a ploughman he would be ;
Sometimes vine dressing was his plan ;
A soldier next, or fisherman ;
But all in vain : the obdurate miss
Would never grant a single kiss.

Pomona, watching, saw one day
An aged woman pass that way,
And bade her, with a kindly smile,
To stop and rest herself awhile.
The woman, talkative and gay,
Related in a pleasant way,
(As any garrulous woman would),
The gossip of the neighborhood.
Her manners gentle, unrestrained
Pomona's confidence obtained.
She, still conversing, did relate
The blessings of the marriage state ;
The joys that crown a loving wife ;
The evils of a single life.
The charming nymph was not amazed
To hear the god, Vertumnus, praised,
And there first felt within her heart
The painless sting of Cupid's dart ;
Then saw a transformation strange,—
The woman to Vertumnus change.
The nymph of fruit, became with pride,
The god of season's lovely bride.

Pomona's worshippers with cheer,
Their sacrifices made each year

To her, that she in preservation
Would keep the best fruits of the nation.
Her *Flamen Pomonalis* stirs
The hearts of all her followers.

Fair nymphs and goddesses to-day
As deities have lost their sway.
Our "Hamadryads" by their arts
Become each one, a queen of hearts,
And pleased, each at her fireside,
As goddesses of home preside.
But still, upon the roll of fame
We find Pomona's honored name ;
Her pomological relation
Is seen in your association.

Pomologists of wintry Maine,
The virtues of the nymph retain ;
The super excellence of their fruit
Proclaims them members of her suite.
And many a "Pine Tree" orchardist
Pomona's "Maiden's Blush" has kissed.
Then "seek-no-farther," "Northern Spy ;"
Next summer "Williams' Favorite" try,
And should you an "Early Harvest" plan,
Forget not, bright, "Red Astrachan."
And when the "Pumpkin Russet" turns,
And "Sops of Wine" your stomach yearns,
When "Moses Wood" is "President,"
When "Rambo" wins the "Beauty-Kent,"
When "Minister" becomes a "Dean,"
And "Duchess-Oldenburgh" a queen,
Then let your "Granite Beauty" meet
On "Kilham Hill," her "Franklin Sweet,"
And have your "Fameuse" "Porter" wait
Beside the "King of Tompkins" gate,
Above his head the "Hightop Sweet,"
The "Garden Royal" at his feet,
Until he sees the "Golden Ball"
Ascend above "Tetofsky" wall,
Then "Jonathan" and he can eat
Each "Twenty Ounce" of "Superb Sweet ;"
But should his "Mother" hungry get,
She'll send him off to "Somerset,"
From good "Benoni" to obtain
A "Nodhead" and "Blue Pearmain."
Should "Hubbardston Nonsuch" allow,
But chase him with a "Yellow Bough ;"
Then "Sarah" will be pleased, I ween,
If he brings home a "Gravenstein."
Pomologists, if we are wise,
We all shall seek "Sweet Paradise,"
Or at "Peck's Pleasant" quarters stay
When "Gloria Mundi" ships away.
And let us, when the "Winter White"
Shuts "Winthrop Greening" out of sight ;
Rest, till the "Baldwin(d)" rudely shakes
The "Golden Russet" down in flakes.
Then shall the "Ladies' Sweet" be ours
Enwreathed with fairest of "Bellflowers."
—Home Farm.

GARDEN TOWN.

(For the Canadian Horticulturist.)

Miss Lucy Lettuce retired to bed
 one evening when the sky was red.
 Bye-and-by Miss Lucy arose,
 And dress'd herself in her finest clothes
 of delicate green and gauzy brown,
 The sweetest maiden in Garden Town.

She called to her neighbour, Miss Polly Pea.
 'Polly, I am invited out to tea.'
 I hear I cook say to John in the stable,
 'Bring Lucy Lettuce in to table.'
 And what do you think, that sour old sinn'r,
 Miss Rachel Rhubarb, was out to dinner.

She piques herself on her pedigree,
 And her foggie old relative "Gregory"
 She's but a vulgar village fixture;
 All make grimaces at her mixture.
 Didst the meanest grubs in Garden Town
 Shy from *her* with scornful frown.

But Polly, I wish that you and I
 Could be as easily passed by.
 I noticed this morning, when you arose,
 How pale and pinched was the curl on your nose
 Those loathing dudes, the worms, I fear,
 Are undermining your health, my dear.

There's our cousins Cabbage, on the next block,
 You know they have come of a hardy stock.
 Well, those very same scamps, I hear folks say,
 Revel and feast with them night and day;
 So this riotous life and "do-as-you-please,"
 Was ended in hopeless heart disease.

See Celia Celery, tall and fair,
 Aristocratic in her air.
 She is the elite of Garden Town,
 With green top-knots and cerise gown.
 Why should she feel so very crusty,
 I've seen her look both old and rusty.

And *she* looks down with haughty mein
 On dear, wee, modest Betty Bean.
 Friend of the great Bonanza King,
 The muscle of stalwart western men
 Was got from thee, thou peerless gem.
 Could I compare you with such trash
 As wishy-washy Suky Squash?

Oh, I should feel myself a felon
 To equal thee to Watermelon.
 Look! Pat Potatoe opes his eyes,
 While I laud Betty to the skies,
 And Sissy Sage, a very Plato,
 With flaring red-head Tom Tomato.

Miss Onion, you are too impressive;
 I'll pass you, lest I weep excessive.

Tho' mummies bowed to you the knee,
 I cannot choose but turn from thee
 And leave thee with thy Leeks and Garlic.
 Come near me and you'll find me warlike.

Patricia Parsley, if you knew
 How ancient builders copied you.
 Your Gothic leaf I've traced on tombs—
 Seen carved on grandly pillared domes—
 And "Parsley Peel," the weaver chief,
 His daughter traced thy lovely leaf;
 On costly fabrics now we see
 Designs of foliage all from thee.

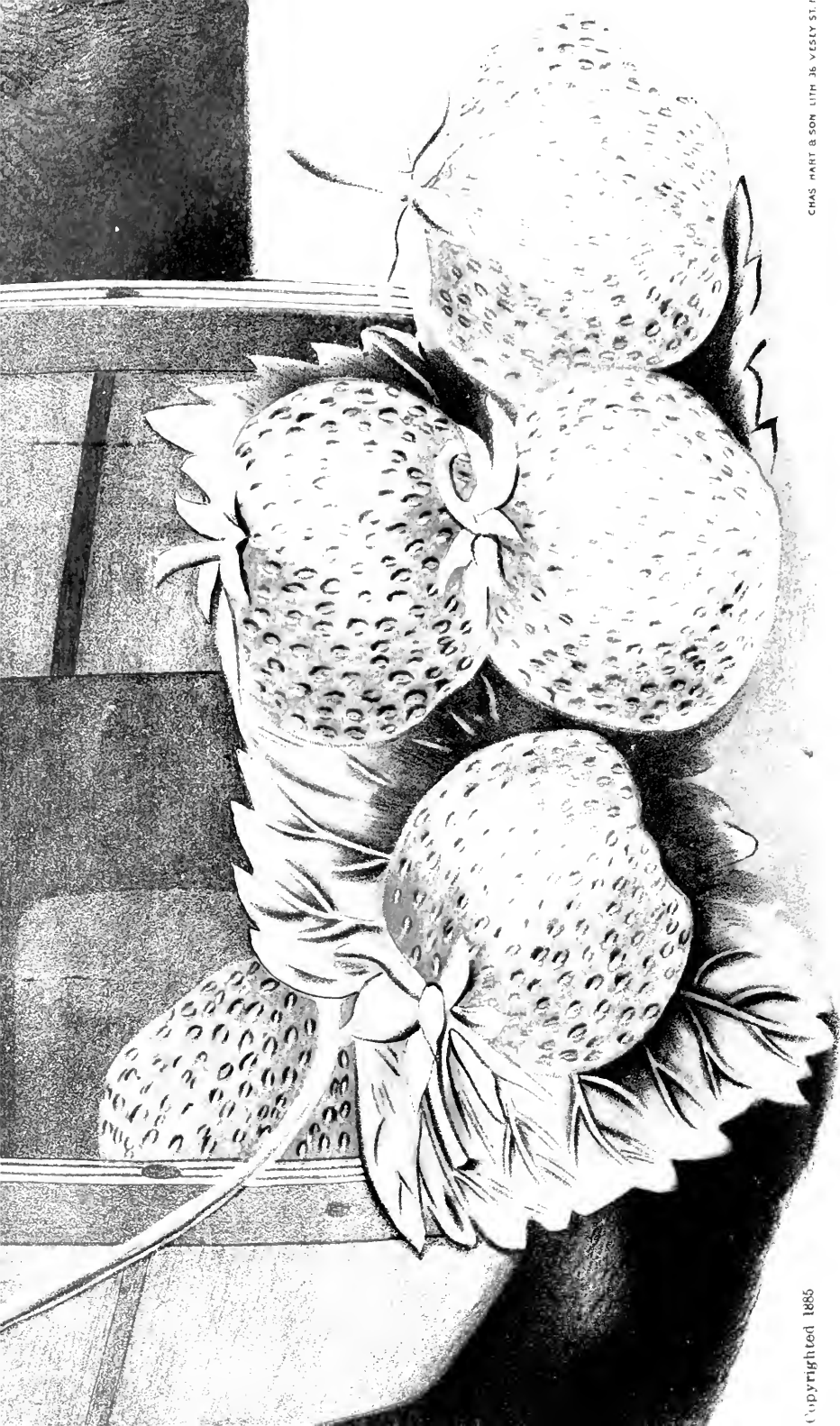
Ah, who is he there by the wall,
 Poising and howing to old Sol?
 The Sunflower, looking proudly mild
 Since patronized by Oscar Wilde.
 He's warning me 'tis growing late,
 And Father Thyme rejects to wait—
 Nurse Dolly Dew is hastening down
 To betide the maids of Garden Town.

Montreal.

GRANDMA GOWAN.

THE POTATO BEETLE.—An Ohio farmer, in relation to killing the potato beetle, says:—"Take equal parts of copperas and slaked lime, using five pounds of each for twenty gallons of water, and sprinkle it on the vines with a brush. I had a field alive with beetles, and after one dose not a single live one could be found, and besides, it benefits the plant."—*Farmer and Fruit Grower.*

YELLOW TRANSPARENT.—I found out a curious thing about the Yellow Transparent Apple last year. My "original tree" (from the one cion I got from Washington in 1870) is in grass, in a rather poor spot, and bore an immense crop; but the fruit was so small that it was not gathered for market, as that of the others was, in August. The fruit hung on, growing better and better, and whiter and whiter, until the last of September, and visitors, when they came around to that tree, declared the apples to be the best on the place. They were the size of Fameuse, as white as the whitest ivory, and really equal to Early Harvest, which I cannot say they are when gathered in August, though they are very eatable then. This apple is the best shipper and keeper of any early apple I know. —*T. H., in Rural New-Yorker.*



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THE "JEWELL" STRAWBERRY

Representing exact size of fruit picked from one plant on which were 225 berries.

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THE JEWELL STRAWBERRY.

Through the courtesy of Messrs. P. M. Angur & Sons, of Middlefield, Conn., we are enabled to present our readers with a colored plate of this new candidate for popular favor. The history of the origin of the Jewell is given us by the Messrs. Angur as follows:—In the month of June, 1880, they brought from New Jersey a quart of very fine berries of the Jersey Queen, and another of the Prince of Berries, and sowed the seed in the open ground. The next year they transplanted the seedling plants obtained from this seed into a heavy, clay loam soil, and gave them ordinary cultivation. These seedlings fruited in 1882, and this one manifested great vigor and productiveness, yielding large berries, which maintained their size throughout the season.

They then took plants from the heavy clay loam, and planted them on the lightest soil on their farm, which they regarded as going from one extreme to the other in point of soil. On this light land, they state, that in 1883 they picked from a single row, sixteen feet long, over twenty quarts of choice fruit.

The color of Jewell, we are told, is

a bright red, changing to crimson when fully ripe; and the quality very good to best. The shape conical, often wedge shaped; seldom flat or coxcombed. The berries are said to be firm, and therefore carry well; the blossoms pistillate, that is, not self-fertilizing. The season of ripening medium to late.

The *Rural New-Yorker* of last year says: "The plants are unusually vigorous and productive as judged from this imperfect test of spring set plants. Each plant averaged from two to three fruit stems, each bearing from six to thirteen berries of goodly size. There are no small ones. The shape is sometimes conical, sometimes broadly ovate, broadened at the tip. The color is a bright red, the season (time of ripening) medium, quality fair." In the number of 11th July, 1885, the *Rural New-Yorker* further says: "Last year the *Rural* said that the Jewell strawberry has come to stay; this season's experience does not change our opinion."

Mr. T. S. Gold, Secretary of the Connecticut Board of Agriculture, says: "The fruit, as produced on my few plants, was of the largest size, fine color, and of excellent quality."

Mr. T. T. Lyon received some plants

from Messrs. Angur in spring of 1884, which fruited this season. He says: "Its bright color, very large size and great productiveness, so far, as well as the vigor of the plant, indicate great promise as a market variety, and I imagine it will prove firm enough to handle unusually well for so large a fruit."

At the Strawberry Show held in Boston, Massachusetts, on June 25th and 26th, 1885, the Jewell was awarded the silver medal for the best seedling strawberry.

The above is all the testimony we are able to lay before our readers in relation to this new strawberry at the present time. We have not yet seen the fruit, nor the plant, and, therefore, can not express any opinion. We understand that it is being tested in Canada, and shall avail ourselves of the first opportunity to inform our readers how it behaves on Canadian soil, and in our Canadian climate.

WANTED,

A few copies of the January number of the *Canadian Horticulturist* for 1885. We will send in return therefor Vol. I., II., III. or IV. complete, if desired.

D. W. BEADLE, Editor.

THE DAVISON'S THORNLESS.

This black-cap raspberry has proved itself earlier in ripening this season than Souhegan or Tyler or Hopkins. The crop of fruit is not quite as great nor the berries quite as large as are those of the above named sorts, but this year it ripened its fruit fully a week earlier.

THE ANNUAL MEETING

Of the Fruit Growers' Association of Ontario will be held in the Town Hall, Wingham, on Wednesday and Thursday, the 16th and 17th of September next.

The following subjects will be discussed:—

- 1.—What are the best varieties of apple for export, and why; that is, what are the points of superiority?
- 2.—Which varieties are the most desirable for domestic use, for the table and for the kitchen?
- 3.—What varieties of apple are found to be best adapted to the climate and soil in the County of Huron?
- 4.—What method of cultivation is found to yield the best results, keeping the orchard under clean cultivation; or planting the orchard with hoed crops, as corn and potatoes; or sowing with cereals; or seeding down to grass?
- 5.—What varieties of pears are successfully grown in Huron.
- 6.—Are cherries grown in Huron, and if so, what kinds?
- 7.—Do plum trees suffer from the winters in Huron? Are they afflicted with the black knot? Is the fruit stung by the curculio?
- 8.—What varieties of plum are best adapted to the climate of Huron?
- 9.—Which varieties of grape ripen their fruit well and yield good crops in Huron?
- 10.—Which are the earliest ripening grapes and the most hardy?
- 11.—Are gooseberries grown in this part of the country, and if so, what varieties, and with what success?
- 12.—Do raspberries succeed well in Huron, and what sorts are grown?
- 13.—What varieties of currants are grown here?
- 14.—What ornamental trees and shrubs are planted in the lawns and around the dwellings in this part of the country?

- 15.—Have any insects appeared in unusual numbers injuring any of our fruits during the present season.
- 16.—Do the large flowering Clematis succeed in this vicinity?
- 17.—Which are the most desirable varieties of cabbage to grow in this section for the table?
- 18.—Is celery grown in this part of the country, and if so, how is it kept through the winter?
- 19.—What squashes are grown here? Can any of them be kept through the winter?
- 20.—Has the Norway spruce been planted in this section of the country for shelter, and with what results?

The first half hour of each session will be devoted to the answering of such questions as may be handed in to the Secretary.

At this meeting the President will deliver his annual address, and the officers for the ensuing year will be elected.

Members intending to attend the meeting will please apply to the Secretary for a certificate, which will entitle them to a reduction of railway fare if the certificate is presented to the ticket agent at the station where the journey is commenced.

The "Brunswick" House will accommodate members at \$1 50 per day; the "Queen's," "Dinsley," "Central," "Exchange," and "British," at \$1 00 per day.

THE CRESCENT STRAWBERRY.

A correspondent of the *Farmer and Fruit Grower*, Illinois, says "Crescents are still the berry for a yield, and they are good enough to eat, too, when fully ripe. They yield with me about 6,000 quarts to the acre."

APPLES IN THE COUNTY OF SIMCOE.

Mr. Charles Hickling, of Barrie, writes us that apples are a moderate crop, while cherries and small fruits are good.

APPLE CROP IN STORMONT COUNTY.

We have received a letter from Mr. John Croil, of Aultsville, in which he says that the apple crop is a failure in his vicinity.

FRUIT CROP IN MISSOURI.

The Missouri State Horticultural Society reports that

Apples	will be	$\frac{6.6}{100}$	ths of a crop.
Plums	"	$\frac{7.1}{100}$	ths "
Pears	"	$\frac{6.5}{100}$	ths "
Grapes	"	$\frac{5.1}{100}$	ths "

THE DOWNING GOOSEBERRY.

We have a few hundred fruiting plants of this gooseberry which last year were covered with fruit. This year they are fully as heavily laden as they were last; there is no mildew on plant or fruit, nor has there ever been any. The berries sell readily to the grocers and dealers in fruit at a dollar per basket of twelve quarts.

RED OR PINK CELERY.

Peter Henderson, writing to the *Rural New-Yorker*, says that all the red or pink celeries not only keep much better than the white, but are more solid and infinitely superior in flavor to any of the white varieties, and the wonder is that these are not better appreciated. In London, England, and in other European markets, at least two-thirds of all the celeries sold, he says, are red or pink; consumers there having long ago discovered the superiority of these kinds over the white.

MASSON'S HIGH-GRADE POTASH FERTILIZER.

The New York Agricultural Experiment Station reports that on the 18th of June there was taken from a package of 350 pounds of this fertilizer a sample which on analysis was found to contain as follows: Available phosphoric acid, $3\frac{60}{100}$ pounds in a ton; Potash, $0\frac{10}{100}$ of a pound in a ton; Lime, 143 pounds; and Moisture $564\frac{20}{100}$ pounds in a ton; and to be worth \$1.52 per ton. The manufacturers sell it at \$30 per ton.

AMERICAN POMOLOGICAL SOCIETY.

Our readers will remember that this Society meets at Grand Rapids, Michigan, on the 9th of September, at ten o'clock a. m. We are informed that there will be a large attendance of prominent horticulturists and many fine collections of fruit. Members of the Fruit Growers' Association of Ontario who intend to be present should write at once to Prof. W. J. Beall, Agricultural College, Michigan, for blanks and instructions to secure railway commutation rates; and to D. W. Beadle, St. Catharines, for delegates' certificate.

"MONEY IN POTATOES"

Is the title of a very interesting little book of fifty pages, published by the Franklin News Company of Philadelphia. The author treats of the soils to be preferred, manures to be used, preparation of the soil, selection of the seed, cutting the seed, planting, cultivating, harvesting, marketing and storing. Our author prefers the nearly level system of culture, doing the hilling with the outside teeth of the cultivator. He also prefers to plant whole potatoes, weighing about four ounces, especially in the case of the early varieties, which have been carefully selected for symmetry of form. He

believes in pedigree potatoes, and that by his methods a field crop of four hundred bushels to the acre can be grown in favorable seasons. We commend the book to the careful attention of our intelligent cultivators.

THE HANSELL RASPBERRY.

On the fourteenth of last July we made an examination of our Hansell Raspberry plants and found a very small crop indeed. There was some ripe fruit to be found by careful searching, while the Brandywine near by was laden with ripe fruit. In point of quality we found nothing in the Hansell superior to the Brandywine, while in fruit production it was very far behind. Our soil is a sandy loam. It may be that the Hansell requires a stronger soil, certainly its performance in this is not at all satisfactory.

MANURE FOR FRUIT TREES.

Animal manures are not what is wanted for fruit trees, including grapevines and berries. We have known prolific grape-vines to bear more fruit, but at an expense of quality, where the contents of the barn-yard were freely used by manuring. We have always found the best success when leaves, the weedings of the garden and forest mold, have been freely combined. These seem to contain the different materials, in proportion, that is, the organic, the carbonaceous, and the nitrogenous; the mineral needs to be supplied, and nothing does this so satisfactorily as wood ashes. It supplies largely potash, which is needed. The best success, and it has been fully achieved, which fruit growers ever attained, was by applying a coat of leaves in the fall, worked into the soil in the spring, followed by weedings from the garden, clippings of the vines, with other vegetable refuse, as a mulch, sprinkled

over with wood ashes, leached or unleached, if the latter, more was required. This made a healthy, not excessive growth, and increased both the quality and quantity of the fruit. It makes a sounder and better keeping fruit.

A NEW RASPBERRY.

We received on the 14th day of July last, by mail, a small box containing a sample of a new seedling Raspberry which was sent us by Mr. C. H. Biggar. The fruit was badly damaged, so very much bruised that the juice was running out of the box. There was sufficient form remaining to some of the berries to enable us to see that they were of large size, much larger than the Brandywine, which this seedling evidently rivals in earliness. It is not possible to form an opinion of the flavor of the fruit when it is in such a condition. Its large size and early ripening are important considerations in its favor.

THE CRAB APPLE AS A STOCK.

Last spring one of our Ontario nurseries had an application for some of the hardier varieties of apple trees for planting in the cold north, provided they were grafted on the crab apple stock. The gentleman stated in his letter that Mr. C. Gibb of Abbotsford, Que. had assured him that even the Russian varieties would be worthless at the north unless they were grafted on the crab apple stock. Many years ago your Editor made a number of experiments in working several varieties of apples on crab stocks, but the result was not at all satisfactory. We now lay before our readers an article on this subject from the pen of Prof. J. L. Budd of the Iowa Agricultural College which we find in the *Prairie Farmer*. It will be remembered that Prof. Budd has made this matter of fruit trees for the cold north a special study for many

years, and that he went, in company with Mr. Chas. Gibb, to Russia for the very purpose of studying the fruit trees of that country.

It will be seen that the view entertained by Mr. Gibb as to the supposed advantage to be secured by working on the Siberian crab is not sustained by experiment.

The following is Prof. Budd's article :—

Mr. T. Boos of Marion Co., Ill., says he has one thousand or more Siberian crabs, and wishes to know if it will pay to plant them in an orchard with view of top-working with desirable varieties of the apple. In Minnesota and North Iowa the crab has been used quite extensively for a stock for the Wealthy, Fameuse, Willow, and a number of the Russian apples. *I do not know of a single instance where the experiment has proved satisfactory.* The union is rarely perfect and the varieties that make a fairly perfect union produce dwarfed fruit with a more or less marked trace of the crab flavour. Last year I tasted specimens of the Anis apple grown on crab stocks which were decidedly bitter, while Anis grown on Duchess stocks were larger, fairer and as perfect in flavour as well grown Winesap. Dr. Hoskins gives a very similar report in regard to the quite extensive use of crab stocks in Vermont State.

In practice the wild crab has proven a better stock. In Dupage Co., Ill., many crab thickets were top-worked a few years ago with the Bethlehemit. The union seemed good and they bore good crops of good fruit for a number of years, but at this time the trees left produce nice specimens of Bethlehemit in shape and color, but they have too much of the wild crab astringency for dessert use. Whitney's No. 20 works well, however, on the wild crab, and does fairly well on the Siberian. H. W. Lathrop, of Iowa City, Ia., markets many bushels every year of this apple grown on wild crab stocks. All things considered, the Duchess of Oldenburg has proved the best stock tried in Central and Northern Iowa for varieties not quite iron-clad when ungrafted.

The wild crab referred to by Prof.

Budd is the very astringent crab found growing wild in many parts of Ontario, known as the *Pyrus coronaria* of botanists.

A NEW HARDY MULBERRY.

MORI'S FAKIVA.

We clip the following by Professor Budd from the *Rural New-Yorker*:—"On the fine specimen grounds of A. Rosenthal, near Vienna, Austria, I was much interested in a peculiar looking and growing mulberry with the above name. It is a clean, upright grower, with medium-sized, thick, regularly shaped leaves. The fruit was said to be large, and of excellent quality. I failed to learn its native clime, and I have not been able to find the name in Kock's Dendrologie, or to hear of it from any other source. It proves on our grounds hardier than the Russian Mulberry introduced from the section north of the sea of Azoff, by the Mennonites; hence is of interest to the West. If any reader of the *Rural* knows of the origin of this interesting species or aught for or against it, I hope it will be reported."

QUESTION DRAWER.

Can you tell me a remedy for moss in lawn graas? JOHN L. WARREN, Brooklin.

REPLY.—The presence of moss in the lawn is probably owing to superabundance of water in the soil. If this be the case the best remedy is thorough drainage. If the soil be already well drained try a top dressing of hard wood ashes.

Please tell me how to get rid of green lice on black current bushes.

JOHN S. WARREN,

Brooklin.

REPLY.—Steep some tobacco, the stems or refuse from the manufacturers

of cigars will do, and dip the branches that are infested with the lice in the tobacco water as often as the lice make their appearance.

WHAT THE PEOPLE SAY.

GRAPES AND GRAPE CULTURE.

BY P. E. BUCKE, VICE-PRESIDENT F. G. A.

The cultivation of no fruit has made such an advance in so short a time on this continent as the grape. It is true the grape we have always had with us; they were found here wild when America was first discovered in the year 1492.

The cultivated grapes of the Northern States and Canada are chiefly derived from two wild native types—*Vitis labrusca* and *V. riparia*, or *cordifolia*. Sometimes these are crossed with the European *V. vinifera*.

V. labrusca has its home between the Atlantic and the Alleghany Mountains. From this wild vine springs most of our table grapes; its offspring are considered to be over-estimated for wine. There are two types of the *Labrusca*: the northern is of a foxy nature; the southern has a musky flavour. The earliest varieties cultivated derived from this class are—Early Victor, very early, black; Moore's Early, very early, black; Worden, early, black; Cottage, very early, black; Vergennes, not very early, red; Lady, early, white; Martha, early, white; Perkins, very early, white. These are all children of the northern or Fox grape. The descendants of the southern type are:—Prentiss, medium in ripening, white; Adirondac, early, black.

V. riparia, or *cordifolia*, is called the frost grape. Its home is in the Northern States and Canada. Its most northern limit is on Lake St. John, ninety miles north of the City of Que-

bee. This is eminently a wine grape. Some of the cultivated varieties are—Clinton, from which is derived most of Arnold's hybrids, which have the Clinton for one of their parents. All the grapes of this class grow readily from cuttings; it makes the best grafting stock for foreign varieties, the roots being free from the ravages of phylloxera. Millions of vines in France are placed on this stock with the most satisfactory results. The three white grapes of this class, from which will probably come the best light-coloured wines of America, are—Faith, very early; Pearl, early; Elvina, medium. Most of the hybrids and crosses of this class, so far, are late; but the reason of this is probably because less attention has been paid to working with the *Riparia* class than with the *Labrusca*. If it should become firmly established that the best wines of this continent are to be produced from *V. riparia* and its seedlings, the ingenuity of the hybridist will soon produce seedlings with as early ripening proclivities as the native *Riparia*, which ripens, or rather turns black in August, though it requires frost to break down its acidity.

Our native species have been so crossed and mixed amongst themselves, and with *V. vinifera*, that we have to-day some five hundred and fifty varieties of native grapes, which number is rapidly on the increase, though of course many of the least desirable are dropping out of notice, and will in a few years be entirely lost sight of, as better strains are being produced.

What this country really wants is early ripening sorts both for table and wine. The Jefferson, so highly spoken of in the August number of the *Horticulturist*, is, I fear, too late for this part of Canada, ripening after Concord.

During the past few weeks, in company with John Lowe, Esq., Secretary

of the Bureau of Agriculture, the writer has been visiting some of the larger vineyards in proximity to the City of Ottawa. The first visited were those of Mr. Alfred French and Mr. Wm. Graham, of New Edinburgh. The latter is celebrated for the production of the finest clusters of grapes probably on this continent of every variety grown there, and also for their early ripening. On one occasion fifteen varieties were shown at the Exhibition at Toronto, and resulted in carrying off thirteen first prizes and two second. The soil is a black slate or shale, not over rich, with a considerable slope to the south. The dark soil and the southern slope give admirable conditions for early ripening of fruit and wood. In point of fact the grapes are generally ten days ahead of any in this vicinity. The mode of training is to erect a trellis on cedar posts four to six inches in diameter, five feet above ground. To these are attached two scantling $1\frac{1}{2} \times 3$ inches, 12 feet long, the lower one a foot from the ground, the other on the top of the posts. To each panel is nailed four light upright scantling (round cedar poles slightly flattened at each end were nailed to scantling, two inches thick); these will be three feet apart; the vines are planted in the centre of the panels; the arms grown the previous year are fastened to the lower scantling; a cane is tied to each upright pole for bearing fruit, and another of the present year's growth is taken from the base of this, or from the arm, and is tied up for next year's fruiting, when the previous year's cane, which has already fruited, is cut away. So that the system followed is the arm-renewal plan. The object to be attained is to have new fruiting wood for each year.

When the Fruit Growers' Association met here in 1875 some of its officers visited this vineyard to examine

the crop and mode of training. The verdict then arrived at was that the plants were being dwarfed too much, and that if continued death would result. I can only say I visited the gardens two weeks ago and the vines and crop looked as vigorous and abundant as they did in former times. Mr. Graham's vines are all of the Labrusca family. The grapes are grown for table use.

We next inspected five acres of a vineyard owned and planted by W. Mosgrove, Esq., Barrister, five miles from the city, at the foot of Lake Duchene; which lies to the north-west of the farm, and gives ample protection from late spring and early autumn frosts, but allows a free sweep of the most prevailing winds of winter, which appears to have had the effect of sweeping away the snow covering and exposed the vines to too violent changes of temperature. If not from this reason there must be some other cause for the high death rate amongst the vines, as they have been killed by hundreds. Mr. Mosgrove has decided to erect an eight-foot board fence between the water and the vine plot, and, if necessary, set out a wind-break of trees; something of this sort is certainly necessary. Mr. Mosgrove is endowed with one of the greatest elements of success, and that is perseverance and a determination to succeed. He is going experimentally into the wine business, and his grapes are chiefly of the Riquaria class, such as Faith, Pearl, and Elvira—of which the latter is the strongest grower. Mr. Mosgrove entertained the Committee most hospitably, and produced some Elvira wine, which had a most fragrant bouquet.

Another vineyard visited was that of Daniel O'Connor, Barrister. Four miles up the Rideau River he has three acres of grapes, principally Lindley (Roger's No. 9) and Brighton. As an

amateur he has made a decidedly good selection in planting these two vines so largely. His vineyard is beautifully neat, the ground is kept free from weeds by a cultivator and harrow passing frequently between the trellises, the space along the trellis and between the vines being dug over with a fork. Hardly a twig was out of place, he had no blanks in his rows, there was no sign of thrips, rot, or any other disease; all was health and luxuriance, and a splendid show for a crop of fruit.

RASPBERRY NOTES.

BY T. C. ROBINSON, OWEN SOUND.

Hansell.—This variety was first to ripen with me this year, and seems to be an acquisition. Those who grow raspberries only for home use, and have been accustomed to pet the large, delicious, but fastidious, varieties of foreign origin, are not likely to see much value in the *Hansell*; for upon first acquaintance it seems to be nothing but a wild variety; the size—from five-eighths to three-quarters of an inch in diameter; the quality, which is sweet, without the peculiar aroma found in most cultivated varieties; the leathery foliage, and persistent wiry habit of growth, all point clearly back to parents in pasture or fence-corner. But what matter? It is early, handsome, and firm, and appears so large and good for its season—when the large late varieties have not had time to ripen; and it is so hardy, having stood the past winter green almost to the tips by the side of Cuthberts badly injured, that it must be of decided value to persons who need early raspberries for either home use or market. It is not so strong a grower as Turner and Cuthbert, and so should have rich soil. It begins to ripen fair pickings when late *strawberries* are at their best.

Crimson Beauty.—A fence-corner variety sure enough; and I can find many wild plants in pasture fields around that are far better, if its behaviour with me is a fair sample of its capacity. The plant is very vigorous indeed, sprouting from the root extremities at a tremendous rate; but it shows that profuseness of small spines to the very extremity of the new-growing cane, which is not found in Hansell, Cuthbert, or any other cultivated variety that I know. It appears quite hardy, but the berries are soft, crumbly, and very small, while they do not seem very early. Perhaps this is enough to say with only one season's test of full-grown plants; but it is hard to keep down the disgust with which one views the performance of this praise-bespattered brier!

Superb.—A good, vigorous grower—early, large to very large; but the color is rather too dark, the berries inclined to crumble, and the quality decidedly inferior. Where people are fond of the old Philadelphia this sort may find friends; but, in spite of its larger size, I do not think it will prove as profitable as the earlier, brighter, sweeter and better-shipping Hansell. Very hardy.

Of the older varieties, the

Cuthbert is just beginning to ripen as Hansell is almost done. For its combined good qualities—size, firmness, quality and productiveness—I still regard the Cuthbert as the best of its season. If the Marlboro' with its earliness will, according to rumour, stretch over the whole season with its larger and brighter-coloured berries, then the Cuthbert must rank further back; but until I fruit the new comer, my loudest hurrah must be for the royal Cuthbert. Last winter was hard on it here: one plantation, one year old, winter-killed to the very ground; another plantation of same age got off

with slight injury; while my old plants five feet high were partially injured, but are now fruiting freely. We never had such a winter before, and Cuthbert may never thus suffer again; but I do not think this variety can be depended upon where the thermometer touches thirty degrees below zero.

Turner.—This "stand-by" is working away in its usual laudable fashion; berries of good size, fine colour, very sweet, and lots of them. The plant is an admirable grower, and the large, thornless canes stand smilingly erect through the worst winter we can bring on. Where only one variety can be grown for family use, and not much care given, by all means let Turner be the one; but we want something firmer and larger in its season for market.

Highland Hardy.—Nearly as large in berry as Turner, and quite early, coming close after Hansell. The berry seems nearly as large and nearly as firm as Hansell, and the taste more nearly conforms to the standard of those persons who are accustomed to the foreign varieties. But the Canadian public will prefer the handsomer Hansell. The Highland Hardy is also distinctively a market variety, and during the last few seasons has here won increasing regard for this purpose. For home use, as already indicated, I prefer the sweeter, larger, hardier and more vigorous Turner, which is only a few days later; but for market use I consider the firmer and earlier Highland Hardy more profitable. Its crop ripens up in shorter time, and hence is more satisfactory to the pickers, besides getting well out of the way before Cuthbert and other late ones come in. I would plant it freely for market if I could not get Hansell. It seems hardy enough.

Of "Black Caps" the first to ripen of course is

Tyler or Souhegan.—If there is any

difference between these varieties no one around here is clever enough to distinguish it. But we keep them in different fields for separate propagation; close together a slight difference *might* be manifest. The berry is very black, of fine size, and very good to take when it first comes in, and the bush is very productive. It begins to ripen nearly with Highland Hardy, and utterly supersedes here the old Davidson Thornless, which had become very unproductive and generally unreliable.

Now, as the season of Tyler is about over, the

Gregg is just coming in. It is not nearly so black as the former (on account of the light-grey bloom in the little hollows of the berry), and it is not so hardy in winter, nor will it behave so well on light soils; yet of all tested sorts it still stands ahead, for its unrivalled firmness and size. It is also sweeter than Tyler. On loamy soil with fair treatment it is very productive, and when it comes into market all other black caps must stand aside. But it comes in very late.

Ohio.—This is the sort that attracts so much attention in New York State as a berry for drying. I don't see how it can be as profitable for this purpose—quart for quart—as *Gregg*, for the latter is certainly firmer, and apparently less watery. But, I daresay, more quarts can be raised per acre of the Ohio. I find it, without question, the *healthiest growing* Black Cap that I have tested. It is also about the sweetest and most delicious. So, if I could plant only *one* Black Cap for the use of my family, I would set out Ohio; but I would try hard for an earlier one, and a later one also. The Ohio is about medium in season.

Centennial.—This new sort pleases me exceedingly. The fruit is quite large. Selected specimens, indeed,

crowding closely the largest *Gregg*, though the average size seems smaller than the *Gregg* average. It is quite black, and it is sweeter and better than Tyler, about as delicious as Ohio, while it appears firmer than either. I feel that a test on one year plants is not sufficient to pass settled judgment upon; but if it fulfils its present promise with me, I must place it as far away the best of all the *early* Black Caps tested here.

Chapman and *Nemaha* grow well, but have not fruited yet. They were planted in spring of this year.

Beebe's Golden.—A new sort that grows a yellow berry on a "Black Cap" bush. The fruit is about the size of *Gregg*, or nearly so, sweet, exceedingly firm, and is produced very abundantly. The bush appears very hardy and vigorous. The only objection seems to be that the color when over-ripe becomes rather too dark, so that purchasers at first think the fruit dirty or decaying. A little experience, however, will overcome that idea, and at present this variety is the only valuable "white" variety I know that can be shipped to market, so I have good hopes of its future record. It tastes better than the following:—

Caroline.—A noble variety for home use or near market. The plant is remarkably vigorous and overwhelmingly productive, while the berries are rather large and of the attractive orange-buff tint of the old Brinkle. But the resemblance ends with the color. The quality is decidedly inferior to that of the Brinkle, and the form of the berry is shorter. But the children like it, and visitors exclaim over it in raptures. We must think well of a fruit that every one likes, except the connoisseur. So with its beauty, hardiness, and almost unequalled productiveness, the Caroline should stand first of its color everywhere, except in the garden of

the amateur, or in the market field for shipment.

Shaffer's Colossal.—After three seasons fruiting, this is the only sort which, I think, excels the Caroline in productiveness. The bush is the largest I have seen, and it covers itself with dark brownish-red berries, that taste very good, and are of about the largest size. The fruit is too soft when fully ripe, and this defect, along with its dark color, hinders it as a market variety, but for home use I consider it unequalled. The roots do not send up "suckers."

Kneret's Giant.—The largest raspberry I have seen. It is of the foreign family, and except with petting, on rich loamy soil, it cannot be depended upon for large yield. But when just suited it appears very productive, and the quality is delicious. Distinctively a variety for the amateur. Hardy enough here with deep snows, but not so hardy as Cuthbert.

Victoria.—Another English variety, of the same general character as the last, only that the berry, while rather smaller and firmer, is one of the sweetest, and is decidedly the most delicious red raspberry that I have tasted.

Brinkle's Orange does exceedingly well with some of my neighbors, but I have not got it on suitable soil at present. It has given us some splendid fruit—just the acme of raspberry flavor. It is usually hardy here, but it needs too much petting for any but the amateur's garden.

Franconia is another variety that sometimes does well for market. It is so inferior in general behavior to Cuthbert, that I purpose rooting it out.

THE ONTARIO APPLE.

DEAR SIR,—The Ontario Apple proves excellently adapted to our sea-shore sections, the thick, strong leaf not being affected by our salt-laden

ocean breezes. The tree makes a vigorous growth, fruits early and annually; the apples are above medium in size, of good quality for us, and with me outlast any other variety, keeping in perfect condition this season until July. It would probably prove a most valuable acquisition for this Province. How much we owe to Mr. Arnold. The American Wonder Pea I grow almost exclusively to supply my own table, having introduced it here when first placed in the catalogues, I think in 1878. It requires a rich soil to yield well, and succeeds best when not too thickly sown. I have three of Mr. Arnold's strawberries, Maggie, Arnold's Pride, and Alpha. The first is enormously productive, the second not far behind it on this point; but both have the fault of not ripening up well, become soft while still partly green, and not red when fully ripe. Alpha colors better, and is also productive.

Very truly yours,

CHARLES E. BROWN.

Yarmouth, N.S., 16th July, 1885.

THE WHITE FRINGE.

DEAR SIR,—In your July copy you show a branch of Fringe Tree, and you ask reports on it.

In May last I was at Dr. Girdwood's, near St. Ann's de Bellevue, P. Q., and noticed this beautiful shrub in all its glory of leaf and flower. It was a pleasant object to look at. I think it stood from seven to eight feet high, and say four feet across the base, looking very thrifty and hardy. The doctor's place is one of the islands in the Ottawa, near the extreme elbow of the Island of Montreal, very much exposed to heavy drifts of snow and high winds. No place can be more exposed to intense cold and high winds than where this tree was growing. Some of the lower branches were terribly

torn by the weight of snow and ice, yet the rest of it showed vigorous growth.

Truly yours,

GEORGE BARRY.

Montreal, Que., July 9th, 1885.

REPORT ON FRUITS,

East Simcoe Semi-Centennial Exhibition, held at Orillia, 2nd and 3rd of October, 1884.

In accordance with instructions received at Barrie, I went to Orillia on Thursday evening, the 2nd October. On Friday morning I proceeded to the Fair grounds, where I at once found the Secretary of the Association, H. S. Scadding, Esq., who kindly went with me to the Hall and gave the necessary instructions to enable me to examine the fruit to the best advantage. The building was a very large structure; well suited for the purpose. It was well filled with all that usually appertains to a large County, Central, or Union Exhibition. There was nothing crowded—every class had plenty of room; yet there was none to spare. The fruit exhibit was well placed in the centre of the hall and well protected with railings.

The fruit exhibit, consisting of apples, pears and grapes, was much larger than I expected to see. All had been judged the day before. Prizes had been offered for exhibits of apples under four heads: 1st, peck of Fall Apples; 2nd, peck of Winter Apples; 3rd, collection of Fall Apples, named; and 4th, collection of Winter Apples, named. There were eight exhibits of fall apples and ten of winter apples on the table. The judges seemed to have understood the word "best" to signify "largest," consequently in both these sections the prizes had been all given to the largest apples, while much better varieties were on the table. This

was particularly noticeable in the winter section, where a peck of English Golden Russets—a most excellent sample—had not received a prize; while first, second and third prizes had been awarded to lots inferior in quality and profitableness.

The collection of Fall Apples consisted of fourteen varieties, most of them of unusual excellence, several of which were varieties not often seen. This lot, as well as the winter apples, were all *named*; but I could only recognize St. Lawrence, Snow, Pumpkin Sweet, Beauty of Kent, and, probably, the one named "Duchess" as being the Duchess de Brabant. All the others seemed to have been named for the occasion.

The collection of Winter Apples to which had been awarded the first prize consisted of eighteen varieties, amongst which I found R. I. Greening, American Golden Russet, Northern Spy, Wealthy, Canada Red, and Snow—all remarkably good specimens. Amongst the remainder I found varieties named McIntosh Red, Lady Apple, Pomme Grise, English Golden Russet, and Porter, all good names, but the apples were not there. This collection also contained three seedlings of very inferior quality.

The second prize lot contained twenty-one varieties: Canada Red, R. I. Greening, Snow, Golden Russet, and Pomme Grise, were fair samples, and true to name. Amongst the remainder I found varieties named Pewaukee, Porter, Haas and Rox. Russet—all incorrectly. Most of the others were seedlings of no merit.

Pears—There were six exhibits, all late varieties, only two of which were named—Flemish Beauty (incorrectly) and Duchess d'Angouleme. All the samples shown were very fine specimens.

Grapes—Prizes were offered for the best three pounds and for the best collection, named. For the three pounds the first prize had been awarded to an excellent plate of Massasoit, second to Agawam, and third to Salem. Both varieties equally as well grown as the first prize lot.

For the collection, the first prize lot contained eleven varieties, amongst which I recognized Moore's Early, Brighton, Massasoit, Delaware (named Salem), Concord, Champion, Clinton, Isabella(?) and Prentiss.

The second prize lot consisted of Rogers' No. 13, Rogers' No. 9 (not quite ripe), Salem (not Salem), Delaware, Concord, Rogers' No. 3, Rogers' No. 8, and Brighton (not Brighton).

This exhibit of grapes was to me the most interesting sight in the building, as all the samples shown (with one or two exceptions) were of unusual excellence. The size of both berry and bunch, and in nearly every case the maturity of the fruit, evidenced careful culture, and also gave the best possible proof that Orillia and its vicinity must be peculiarly suited both in soil and climate for the successful and profitable cultivation of grapes.

The building was lighted with electric lights in the evening. I was one of the first to enter and found the caretakers cleaning the dust from the exhibits wherever necessary—a practice to be highly commended.

The president of the society, P. Bertram, Esq. (who seemed to be everywhere), visited me several times during the day and evening, and gave me every assistance and encouragement possible.

Respectfully submitted.

THOS. BEALL.

Lindsay, Nov. 1st, 1884.

FRUIT GROWING IN CANADA.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST

SIR,—I am in receipt of the tenth annual report of the Montreal Horticultural Society and Fruit Growers' Association of the Province of Quebec, and wish to bear testimony to the high merit which always characterizes the publications of that Society. The progress of fruit culture in almost all the provinces of the Dominion is rapidly advancing; especially is this the case in Ontario and Quebec, where it is fostered by the governments of these provinces. This enables the sister societies to distribute a large amount of useful information, and plants, annually.

I notice, however, an error at page 56, which I take the liberty of pointing out. Dempsey's 25 is placed among the black grapes; both his 25 and 60 are white; the former is altogether too late for this part of Canada, or Montreal. No. 60 is rather small, about the size of Delaware; I do not think it will ever take much of a place in public estimation. Dempsey's best grape is undoubtedly his Burnet; it ripens with, or a little before, Concord. It is short jointed, is a good grower, and is fresh and vigorous where soil and situation are suitable. It is free from thrips, rot and mildew, and is the highest flavored out-door grape grown.

One of its parents is the Black Hamburg, after which the Burnet takes many of its finer qualities.

The fruit growers of Ontario are already taking steps with regard to getting up exhibits in glass jars; the fruits are being preserved in salicylic acid, and are intended for the Prince of Wales' Colonial Exhibition, in London, England, in 1886. It will be remembered at the Exhibitions held in 1851 and 1862 in that city, some furs, sleighs, buffalo robes, and toboggans

were shown; the Carnival Number of the *Montreal Star* and *Witness* for the last two seasons have been distributed broadcast over Britain and the Empire. Photographs, as a rule, taken in Canada for exportation, generally show her sons in their winter costumes of fur coats and caps. So largely has winter taken precedence in all works of art sent from this to the mother country, that the impression in the old world still obtains, that the French King only ceded to his brother of England a few acres of snow. No pains have hitherto been taken to show our lovely spring, summer, and autumn climate to advantage. There is only one way in which this can be done in a practical manner, and that is through the fruits we ripen. Such grains as wheat, barley, oats and peas, of course, give evidence of "seed time and harvest," but the bloom on a peach, or the grape, or the lovely bright color of the apple's cheek can only be given by our bright clear sky, and an unveiled sun. The Fruit Growers' Association of Ontario, if properly supported by the Government, are determined to make such an exhibition as will wipe away from Canada the reproach which rests upon her in this matter, and also the idea that we are only a people whose not very remote progenitors was a cross between the native Indian and the Esquimaux.

Fruit such as we cultivate is the culmination of one of nature's choicest gifts. Centuries have been expended in bringing the apple, the pear, and the grape to their present excellence in Europe; they have advanced in a parallel line with civilization itself, with which they keep pace, but in Canada we are adapting new varieties from heretofore unknown strains to our soil and climate, and we are doing so at a rate which astonishes the workers themselves. It is well known to fruit growers that English gooseberries and

strawberries, and the foreign grapes are not suited to our climate; that they have to be united by the hybridist, or accidentally by nature, to the native plants of this country, and that the offspring of these parents, such as the Dempsey grape, or children of that, or some other variety, will eventually be obtained with hardy constitutions, early ripening, and of a quality which will vie with, if it does not exceed, those of the vines of the Rhine and the Seine. We know our fruits will show our climate, and we trust they will testify to the high standard to which our people have reached in the appreciation of nature's bountiful and best gift to man—good fruit.

We hope, as a Society, we will have the friendly rivalry of our sister of the Province of Quebec, in London in 1886. We shall ever remember with pleasant feelings the time we met in the beautiful park at Philadelphia, during the American Centennial in 1876; and we look forward to a similar meeting on British soil next year. The decade has not passed without a considerable advance in the culture of fruit in both Provinces.

P. E. BUCKE,

Vice-Pres. Fruit Growers' Ass'n of Ontario,

Ottawa, August 3rd, 1885.

STRAWBERRIES—THEIR KINDS AND CULTURE.

Worth far more than the annual subscription to the *Horticulturist* are to its readers the excellent letters on strawberry culture in late numbers of the magazine from the pens of Mr. John Little, of Fish Creek (*Canada's Strawberry King*); Mr. T. C. Robinson, of Owen Sound; Mr. W. W. Hilborn, of Arkona, and others. In kinds, among the legion of them, we could hardly expect them all to agree; nor do they in the manner of culture, but like wise men they agree to differ

and ask the experience of their fellow fruit-growers.

Although I have tried kinds enough to entitle me to the name of an experimental grower, it would be out of place in me to enter into what has been so thoroughly done in their description. Of just three kinds I will venture a remark.

Early Canada.—Although a poor berry, and liable to be destroyed by late spring frosts, I consider it valuable. Spring of 1884 I had half a crop of them destroyed by the frost of 29th May. Discouraged by this, I this year planted of them only in the proportion of one row in 30. Director Smith is a good hand at reminding us of our mistakes, let him add the following to his spicy list in Report 1884, p. 150 :—

This year my Early Canadas were in the market, a fine crop, two weeks before the Wilson, and found a ready sale at 12½ cents while I had to take 8 cents for the others. So severe a frost at that season we might not have for many years, and I would rather risk it than the chances of a glutted market, as we had this year, with the price down to 4 and 5 cents per basket.

Sharpless.—Tempted by their size and beauty I planted this year a large proportion, but soon found out to my cost that Mr. Robinson's words are no mistake when he says, "It's one of the best berries to lose money on I ever tried." Besides their lack of flavor, you can't carry them farther than the table. I rooted out a large patch of as thriving plants as I could desire, planted this spring, considering the first loss the least. That was mistake No. 2.

Glendale.—Sometimes called the lazy man's berry, thriving with so little care. Appropriate name enough—a lazy man he would be to grow no better. A basket of these has a little

tasteless fruit and any amount of *hushes*. Good, methinks, for such as have *prodigal sons*.

Matted Rows v. Hills.—I think the majority of large growers have favored the former; Mr. Robinson, however, does the hills, and his remarks, evidently penned as the result of careful trial, are worthy of much consideration and his system of unprejudiced trial.

Mr. C. M. Purdy favors a system between the two, "The Hill and Row System," keeping the runners off till late in the season, and then running into rows. It looks well on paper.

But there's another system, the same author calls it "The Slipshod System," *May be it's the best o' them a'.* The Editor will laugh when he hears the Scotchman's story; but let him not misunderstand the word story—its a fact, *a stubborn thing. As shair as daith*, I'll vouch for it.

In our neighborhood lives a good honest man. With no pretensions to gardening he bethought him to try some of these wonderful methods books tell us of, of making money easy, and he has well succeeded. Report reached me of a wonderful crop of strawberries he had on a very small piece of ground. Curiosity led me to visit him and satisfy myself in the matter. I found his strawberry patch in a nearly square piece of ground measuring 48 x 28 yards. That Editor of ours is good at figuring, he'll tell you it's a trifle over a quarter of an acre, but so little that for convenience sake we'll call it that. Off this he sold this summer 1,500 baskets, besides used in the family and gifted 200; say 1,700 baskets he sold at 8 cents = \$136, *i. e.*, at the rate of 6,800 baskets = \$544 per acre.

His plants were all Wilson's, set in the spring of 1884, in rows 3 feet apart, 18 inches apart in the rows. As soon as the runners appeared they were left unmolested and soon covered the

whole ground, with no further culture than an occasional cutting down with the hoe of trespassing weeds. But before the berries were ripe it was a mass of weeds; but weeds and all the results were such I could not help telling him I didn't know if he could adopt any easier or more paying method of cultivation. Just in one point he agrees with friends Dempsey and Hilborn, skilful cultivators, *i. e.*, in adopting the one year system, which he must.

Wonderful crop I think even the Strawberry King must admit under the circumstances (about 200 bushels to the acre), and although neither he nor I can recommend the method of culture, isn't there here encouragement for every poor man, *and rich too*, to read the *Horticulturist* and supply his family at least liberally with this wholesome and delicious fruit. The slothful man says, "There is a lion without, I shall be slain in the streets," and will harp over an imaginary bit of trouble and expense. Everything that's worth having costs trouble, and as to the expense, this man's outlay, about \$4, was insignificant compared with the profits.

JOHN CROIL.

Aultsville, August, 1885.

THE PRAIRIE FARMER is published at 150 Monroe Street, Chicago, Illinois, every Saturday, and sent post paid for \$2 a year. It is now edited by Orange Judd, who has been favorably known as an agricultural writer for many years. The paper is offered to new subscribers for six months at the nominal price of fifty cents to give the public an opportunity of becoming acquainted with this neatly printed and illustrated paper. The number for July 25th contains a complete copy of the law passed at the last session of the Illinois Legislature for the promotion of drainage, providing for coöperation

in draining farm lands. A copy of this number will be supplied for five cents. Our own farmers should study this law and seek to have such of its provisions as are applicable and needed enacted by our own Legislature.

FRUIT PROSPECTS IN ONTARIO.

We gather from the returns published by the *Rural New Yorker* the following particulars:—

Appin.—Apple crop large, not many Cherries.

Arkona.—Apples promise about an average crop. Cherries very scarce, not many plums or pears, no peaches. Raspberries, currants and gooseberries are average or perhaps a little above.

Brewster.—Apples promise well, currants and gooseberries very well, peach trees badly frozen. Grapes below the snow line all right and promise a good crop.

Duntroon.—Prospects good for all kinds of fruit, especially apples and plums.

Grimsby.—Fruit prospects good.

Harrow.—Apples an average crop, not many pears, and very few cherries. Peaches all killed by the hard winter. A few quinces. Very few plums.

Oxford Centre.—Pears promise to be a large crop. Small fruits in abundance. Apples a failure.

Sarnia.—Apples and pears very promising. Peaches, grapes and currants somewhat damaged by the late frosts and severe winter.

Tiny.—The fruit crop promises to be very large.

Westminster.—Fruit about an average.

Whitby.—Fruit a good average.

Wolf Island.—Orchard fruits poor, cause late frost.

Ayr.—Apples not half a crop. Cherries and plums less than half a

crop. Currants and gooseberries an average.

Barrie.—A good crop of plums and Cherries, just medium of apples and small fruits.

Bridgeport.—The apple crop is medium good.

Dawn Mills.—Prospect for fruit better than for two years.

Delaware.—Apples medium, also cherries, no peaches, very few pears.

Edgely.—Fruit of all kinds, such as apples, plums, and currants very short. Grapes an average crop.

Ingersoll.—Apples light bloom, pears heavy, grapes killed a good deal, peaches all dead.

Hillsborough.—Apple prospects good.

Listowel.—But little bloom on apples, pears and crabs. Plums nearly all killed. Small fruits look well.

Mohawk.—Early apples plentiful. Winter apples very scarce. Good show for small fruits.

Nottawa.—Apples good, but the hard winter hurt plums and pears.

Port Rowan.—Fruits a light crop.

Seaforth.—Prospects of all kinds of fruit excellent.

Scotland.—Apples scarce. Pears above an average. Peaches very few. Plums covered with the mark of curculio. Small fruits good.

St. George.—Apples below an average. Small fruits promise good crops.

Stratford.—There is promise of abundant yield of fruit of all kinds.

Strathroy.—Fruit from present appearances will be a heavy crop, trees looking healthy with a splendid set.

FRUIT SYRUPS.

Making syrup is an all day affair, and a good plan is to set the jars of juice in the oven at evening and keep a low fire all night, finishing off next forenoon. Six quarts of Grape juice should make one of syrup, wine-colored, lucent, of delicious, refreshing perfume

and flavor. One tablespoonful in a glass of water gives a delightful drink, like fresh Grape juice, the true substitute for wine with all temperate people, and the finest medicine for correcting a feverish, bilious state ever known. The syrup itself is valuable for restoring strength, and consumptive persons should take it by the tumbler daily, sipping it leisurely, with sugar, if too tart for the taste. It makes new, rich blood, it cleanses the system, clears brain and feeds starved nerves. It has the hypophosphites which doctors prescribe for wastes of tissue, and taken freely will arrest even critical stages of disease. People fed on pure food with abundance of fruit need never dread cancer, Bright's disease, gout, neuralgia, dropsy, or a dozen other of the race.—SUSAN POWER, in *Vick's Magazine*.

ROSES FOR THE HOUSE.

The following varieties are the most suitable for window garden cultivation: Twelve Teas—Safrano, Bon Silene, Isabella Sprunt, Rubens, Odorata, Perle des Jardins, Gen Tartas, Yellow Tea, Madame Bravy, Madame de Vatriy, Madame Lambard and Souvenir d'un Ami. Four Bengals—Queen's Scarlet, Douglass, Duchess of Edinburg and Ducher. Four Bourbons—Hermosa, Queen of Bourbons, Queen of Bedders and Edward Desfosses. Besides these there is a class of recent introduction, known as the Polyantha Roses; they are of dwarf habit and are continually in bloom, the flowers being produced in clusters, and although the individual flowers are not large are very perfect. Of these, the most desirable are Mignonette, rose, Mlle. Cecile Brunner, salmon pink, Little White Pet, light pink, and Paquerette, pure white. Besides these we have the dwarf form of Rosa Indica, commonly called the Fairy Rose. It is a very pretty little miniature Rose, having double, rose-

colored flowers, about the size of a dime. As it is constantly in bloom it is a plant that will always attract considerable attention, and is deserving of a place in every window garden.—CHAS. E. PARNELL, in *Vick's Magazine*.

RASPBERRIES AND STRAWBERRIES.

We have great difficulty, so far north, in getting raspberries hardy enough to withstand our severe climate. Occasionally there are seasons when snow comes early, and in such quantities as to cover the bushes, and thus afford ample protection. But these are very exceptional, and consequently we are obliged to protect the canes by laying them down, which at best is an expensive and troublesome undertaking. As yet there is an abundance of wild raspberries sold on the market at such a rate as not to guarantee the expense of growing raspberries, except in an amateur way. Among the reds Cuthbert is certainly the best; although late in ripening it is well worth waiting for. The cold-resisting powers are found to the greatest extent in Saunder's No. 60; but in quality it is inferior to the Cuthbert, and not prepossessing in color, being a sort of purplish black. For our northern sections it is, however, an acquisition. Among the blacks Gregg, when well pinched back and grown low, has given the best satisfaction.—[If Mr. Wright will can some of Saunders' No. 60 he will find them by no means inferior to the Cuthbert.—ED. *Can. Hort.*]

Strawberries can be grown in greater variety, as they are more easily protected. Wilson seems to be the general favorite, although of late many are speaking in warm terms of the Crescent Seedling. Those of my neighbors who have tested it spoke of it in the highest terms. I consider it one of the best we have. As for me, it produces more fruit with less trouble than any berry

on my grounds. For a very large, showy berry I have none that surpasses the Sharpless, but as it is so irregular in shape and berry, also less productive for the labor spent on it than these last mentioned varieties, I grow it in limited quantities only.—A. A. WRIGHT, in *Rural New Yorker*.

THE OSTHEIM WEICHSEL CHERRY.

PROFESSOR J. L. BUDD.

Over a large portion of Europe, where the Heart and Duke varieties of cherries fail to do well, and even in many parts where the latter succeed perfectly, the Ostheim is a general favorite, of prince and peasant. As European pomologists unite in reporting it hardier in tree, firmer in leaf, and much higher in quality of fruit than any of the Montmorency varieties (of which our Richmond is one), it seems strange that it has not been introduced and propagated by our large nurseries of the Eastern States. Possibly the small size of the tree and its bushy habit of growth may account for this general neglect; yet, without the aid of nurseries or horticultural societies, it has been introduced at a number of points in the West by settlers from Eastern Germany, Poland and Silesia, and is rapidly coming to the front as one of the best and most profitable of the sorts yet tried in the Mississippi Valley.

At several points in Minnesota, it has lived and fruited where the Richmond has utterly failed, while in Iowa, Kansas, Nebraska, and Missouri, it has radiated from several centers of sprout distribution.

During the summer of 1884 the foliage of the Richmond and English Morello was so injured by rust that the wood failed to properly mature, and during the past test winter the trees have been lost, except on the most favorable soils, while the thicker and

firmer leaves of the Ostheim were free from rust, and the trees now promise a heavy crop of fruit.

My experience and observation fully sustain Downing's estimate of the fruit, viz.: Fruit large, roundish-oblato. Skin red, dark liver-color at maturity. Stalk long. Flesh, liver-colored, tender, juicy, almost sweet sub-acid.

It may be well to say that a number of varieties of the Griotte race have the name of Ostheim in various parts of Europe.

We have Ostheimer, Cerise d'Ostheim, Ostheim Weichsel and Griotte d'Ostheim imported from Europe. These all seem identical, as does also the variety introduced by settlers from the Old Country into Kansas and Missouri under the name of Ostheim.—*Rural New-Yorker*.

COCA—WHAT IS COCAINE?

The discovery that Cocaine will produce local anæsthesia, or insensibility to pain, is next in importance to the discovery of the properties of ether. Cocaine has of late been used in important operations on the eye; this, and especially its recent employment to allay the pain in the terrible disease under which General Grant has suffered so long, have given it unusual prominence.

The earliest European travellers in Peru, mention the use, by the natives, of a leaf, which they chewed to produce a stimulating effect, similar to that of opium. The leaves, known as Coca, are from a shrub which bears the same native name, and is cultivated in Huanco, and other mountainous provinces in the Peruvian Andes, which have an altitude of two to five thousand feet above the sea. The shrub reaches the height of six or eight feet, and has very thick, evergreen leaves. The name of the genus is *Erythroxylon*,

which means red-wood; several of the species, natives of tropical countries, having wood of a red color. The specific name of the Peruvian species, is that given to it by the natives, hence its scientific name is *Erythroxylon coca*. In its relationship the shrub is nearest to the flax and the geranium families. The shrub is cultivated in a rude manner by the natives, who raise the young plants from the seeds, to form plantations known as *Cocals*. In from three to five years from planting, the shrubs afford a gathering of leaves, and after that a picking is made annually. The leaves are mature when they break on being bent. They are dried on platforms, or on a portion of ground made smooth by stamping. The leaves when dry, are packed in bales of about eighty pounds, which are covered by a coarse cloth made by the natives. In this form it is an important article of domestic traffic in Peru, and recently it has been sent to this country and to Europe in considerable quantities. The wholesale value of the leaves is from one dollar, to one dollar and fifty cents per pound. In Peru, the use of Coca is very general, especially among the natives. The leaves, mixed with lime, are chewed and the saliva swallowed, the individual remaining quiet the while.

The effects of Coca are said to be most pleasurably intoxicating, and those who become addicted to its use, rarely abandon it. It is claimed that by the use of Coca, the Peruvians can perform a great amount of labour in the mines, and as porters in carrying loads, upon very little food. The active principle Cocaine (not "Cocoaine," as sometimes incorrectly written), has been separated. The process is expensive and the product small, hence the price has been very high, the salt of Cocaine having been sold at over a dollar a grain.—*American Agriculturist*.

CORNUS FLORIDA.

I have always esteemed the flowering Dogwood as one of the most beautiful of our small, native trees, and never let an opportunity pass without recommending it for the lawn, where it is not often seen, simply because it is a native, and not because it is not beautiful. I know of several specimens that are worth walking miles to see. The largest stands in the middle of a 10 acre lot, about two miles from the village of Roslyn, L. I. It is altogether the finest Dogwood I ever saw. The tree is upward of 30 feet high, with a round and perfectly symmetrical head about 30 feet in diameter, supported by a clean, straight trunk nearly six feet high and some nine or ten inches in diameter. It is as nearly perfect as a tree can be, and a grand sight when in flower. It was a sight of this tree many years ago that gave me my first impression of the great value of the Dogwood as a tree for the lawn. Another very fine specimen stands by itself on the beautiful lawn of Mrs. W. Barr, at Orange, N. J. I saw it this Spring just as it was coming into full bloom. In sight at the same time were *Magnolia stellata*, *M. Soulangiana* and *M. conspicua*; and the nearness of the latter naturally led to comparisons, very much, to my mind, in favor of the Dogwood. Liking company when enjoying a good thing, I asked Mrs. Barr and others present to look at the Magnolias and the Dogwood and tell me which they thought the more beautiful. They all agreed with me that the Dogwood was more beautiful than the Magnolia. The Dogwood has this also in its favour, that it clothes itself in the most lovely of autumn tints. It is also a very clean and symmetrical tree. Therefore, I say that the Dogwood is another native tree that is worthy of a place even on the smallest of lawns. Plant it. To have it at its best, it should be

at least 15 feet from any other tree or shrub. Choose a small plant rather than a large one.—*Rural New-Yorker*.

THE CABBAGE MAGGOT.

For the past two weeks I have had scores of letters complaining of the ravages of the Cabbage Maggot, which is evidently more than usually destructive this year. In many places in this vicinity not a single head will mature. To counteract its ravages in our sample grounds, where we test all our varieties of cabbage and cauliflowers, we had until this season dressed the land heavily with oyster shell lime, using at the rate of 150 bushels to the acre, sown on the land after plowing, and then well harrowed in. But this year the man in charge of our trial grounds was absent at the time the ground was being prepared for the cabbage and cauliflower, and the dressing of lime was, for the first time in five years, omitted. The cabbage and cauliflower plants, which were strong spring-sown transplanted plants, were set out about the middle of April. They started well, but about the middle of May the droop in the leaf showed that the maggot was at work. We at once scraped the soil from the stem of each plant and dusted lime around it, again drawing the soil up to the stem. In addition to this a good handful of guano was dusted around every five or six plants, or about as thick on the surface of the soil as sand is usually strewn on the floor.

The application of lime at once arrested the work of the maggots on the stems, and the guano started a quick growth, causing each plant to make strong roots above the wounds made by the maggots. The result is that the crop to all appearances is saved. We left a few rows without applying the lime and guano, to test the result of the experiment, and in these rows

hardly a plant will head up. Of course, this remedy is expensive, probably costing in guano and labour \$20 to \$25 for every acre of 10,000 plants.—PETER HENDERSON, in *Rural New-Yorker*.

THE GRAPES OF CENTRAL ASIA.

PROF. J. L. BUDD.

When at the great commercial fair at Nishay Novgorod, on the upper Volga, in the Fall of 1882, we saw many tons of raisins and dried grapes of quality equal to the best grown and put up in Southern France or Spain. These were put up and grown in Persia and North Bokhara, and we were told by the intelligent Persian Consul that varieties of equal excellence were grown in Turkestan, Afghanistan, North Bokhara, and on the foothills of the North Himalayas. The leaves of these oriental varieties are thick and firm, like those of the Eastern apples, pears, cherries and plums. Hence we have the best reasons for believing they would prove more valuable for crossing with our native species than the varieties of *Vinifera* we have tried from the soft, humid climates of Southwest Europe.

In the Southern States some of these thick leaved varieties may prove desirable without modification by seedling production or crossing; while at the North, crosses on our hardy native forms may give us the perfect leaf and the relatively perfect fruit we have been seeking for the Upper Mississippi Valley. As the belief is general that the raisin, and the best dessert grapes of the Old World are all of the *Vinifera* family, it may be urged that the phylloxera will head off the culture of these thicker-leaved varieties of the East. On this point we cannot be certain; but it is proper to say that Dr. Karl Koch and Dr. E. Regel have raised the question of the *separate and distinct* origin of the grapes of West Asia. The foliage of all of them comes

nearer to that of the primitive forms known as *Vitis Amurensis*, and *Vitis Davidii*, than to any primitive or cultivated forms of the West.

Again, it may be urged that some of the Turkish and Indian grapes have been tried in West Europe, and with us, and found wanting. On this point it should be remembered that we have imported, so far, from the coast climates, while the present thought is to introduce the varieties of the arid interior. With his well known love for, and sympathy with the "art which does mend Nature," we can hope and trust that Col. Colman, our new Commissioner of Agriculture, will aid in introducing, not only the grapes, but the fruits generally, and the cereals, grasses, and shrubs of the little known region of Western Asia. With needed instructions, our Consul at St. Petersburg can aid in securing the products of Bokhara, while the Persian Consul, if encouraged to do so, can secure many valuable products from Persia, Turkistan, and even Afghanistan.—*Rural New-Yorker*.

TWO FINE NEW ROSES.

A Philadelphia firm invested \$4,000 in the stock of a single rose from an English florist two years ago, but finding this winter that there were still some plants of it held by its originator, purchased them at an expense of \$2,000 more. Not a single plant has yet been sold of this stock, for which \$6,000 was paid. It will be put upon the market in March. It is anticipated that it will create a sensation in cut flowers next fall, in winter giving us for the first time a rose equal to the General Jacqueminot in every respect, with even a richer fragrance. Its great value with the commercial florist lies in its being a continuous bloomer, giving buds as freely as any of the monthly varieties. A rival appears, however, now that the

time approaches for the Bennett rose to be given to the public.

A florist in Washington has had the good fortune to originate a variety of a handsome shade of crimson rose of large size and excellent form, and in fragrance surpassing any rose in cultivation. The scent is a blending of the tea and English moss-rose perfume; a few buds will fill a room with the most delightful odor. To complete its good qualities it is monthly, blooming as freely as the La France or other roses of that class; moreover, being part hybrid perpetual, it will prove hardy in most localities, and in consequence be as valuable for out-door culture as for forcing. This rose has been named the "American Beauty."—*N. Y. Evening Post*.

ANEMONE HEPATICA.

Among the spring wild flowers of this country there is no greater favorite than the Hepatica, or Liver-leaf, or Liverwort. It is among the very first we expect at the opening of spring; its handsome and peculiar leaves distinguish it among all low-growing plants, and being evergreen are in full form and beauty at a season when most herbaceous plants are destitute of foliage. Its small purplish flowers, borne on long stems, seemingly offer themselves to their admirers, and they are borne away by loving hands as gifts for friends, and to grace our table vases, welcome tokens of the awakening of vegetation from its winter slumber.

"Sweet are the memories that ye bring
Of the pleasant, leafy woods of spring;
Of the wild bee, so gladly humming,
Joyous that earth's young flowers are coming.

Much as this plant is admired, it is strange that it has not been commonly cultivated; it is a single instance of numberless cases illustrating the well known fact that we prize for our gardens, plants of foreign origin in preference to native ones, without regard always to real worth. By-the-by, this

plant is a denizen of the woods and copses and wild grounds of Europe and Great Britain as well as of this country, and there it has been far more freely introduced into gardens than here, in fact, it is practically unknown in this country as a garden plant. As it grows naturally in cool and somewhat shaded places, no doubt many have inferred that it would not be suited to the garden fully exposed to the sun. This however is not the case, as the writer has seen it in most trying situations, one of which was on the south side of a house, near the wall, where the soil was dry, and where it received the full sunshine all day and the reflected heat from the wall, a place particularly well adapted to that heat-loving plant, the Portulaca, and yet in this situation the Hepatica has lived and flourished, undisturbed, for many years. True, this is not the treatment we should advise for it, but it demonstrates the vitality of the plant. In a deep, rich soil in a well cultivated border it will do well, and it will be quite at home in a place a little shaded by the tops of trees, or among shrubs.—*Vick's Magazine*.

SNOWDROP AND SNOWFLAKE.

As these plants are so hardy and thrifty, there is no reason that they should not be plentiful not only in our gardens and on our lawns, but in country places by the roadsides and in groves, and by the sides of shady walks. A little attention given to planting the surplus bulbs of the garden in such places, would give them a chance to live and spread, and to beautify places whose attractions are none too numerous. The plants do not object to shade, as many others do, and will send up their snow-white bells under trees and shrubs. Those who are embellishing school grounds with plants will find the Snowdrop and Snowflake

most acceptable; and they are exceedingly appropriate forcemeteries. After the plants have finished blooming, and the foliage begins to turn yellow, they can be lifted and divided and planted out again immediately. It is not necessary to dry off the bulbs.—*Vicks Magazine*.

POPULUS ALBA BOLLEANA.

In 1879, Prof. Sargent published a translation of the notes of Dr. Chas. Bolle, of Berlin, in regard to the rare beauty and value of this upright form of the White Poplar. He said: "The bark, even in old specimens, is smoothed out, as if it were polished; it is of a clear bluish green color, without spots or cracks. The ramification is strong and characteristic. The brilliant white of the lower side of the leaves, which remains unchanged throughout the summer, makes a strong contrast with the shining dark-green of the upper side, producing a striking effect and rendering this tree visible for a long distance. The wood of this fastigiate poplar is of finer quality and more highly esteemed here than any of the other poplars. It is an ornamental tree of the first order, and I cannot too highly commend it."

When I first saw specimens of this rarely beautiful tree in South Russia, and was told that it was native to Turkistan, I was fearful that it might not prove an iron-clad in the Northwest, but we afterwards found grand specimens in the Volga region, and learned that its range was up to the 54th parallel in Central Asia. With a view to testing its capacity to endure low temperature under the most unfavorable circumstances, we grafted it last Spring on the crown of one-year *Populus Wobsty* plants standing on very rich garden soil. The cions made an upright growth of six feet, yet 35° below zero

has not browned the finest terminal points.

I wish to direct the attention of Eastern and Western propagators to this tree, as it is certain to become a general favorite over a large part of the continent as soon as its merits become known. It is so unique and peculiar in habit and expression of foliage that the introduction of single specimens, here and there, will create a demand for the plants which our nurserymen *must supply*, as it is not easy to propagate from cuttings, except by skilful management. If put out in the Spring in the usual way of propagating the poplars and willows, not one cutting in 500 will grow. To insure success, the cuttings must be placed in a propagating pit in Autumn, with bundles inverted, as we manage the grape and mulberry.—J. L. BUDD, in *Rural New Yorker*.

A NEW CLIMBER (*Clematis crispa*).—Color, lavender blue tint on the surface and margins of petals; the centre, an opaque white; thick and leathery in substance, and highly perfumed. The flower is very unique in appearance, resembling a miniature lily, with a spread of flower 1½ to 2 inches wide, and 1¼ to 1½ inches in length. It is likely to become very popular. Not quite so strong a grower as the *C. coccinea* but as beautiful.—*Prairie Farmer*.

THE RED BIETIGHEIMER is a very large and beautiful fall apple that must rapidly take a place among the lists of standard varieties for all sections. The tree is a rapid grower, with large dark-green leaves, making a beautiful tree. It bears large crops of fine, rich, red-striped fruit alternate years. It is very productive, but not an unusually early bearer. This variety is valuable for market, where its fine appearance will always attract buyers, and its good cooking qualities will make it one held in high esteem everywhere. We believe the tree will prove hardy in most sections, and will prove a popular and valuable fall apple.—*Farm and Garden*.

OLD AGE'S GARLAND.

While resting in my easy chair,
With closed eyes, I hear him there,
Gowan, with the golden hair—
Golden hair and starry eyes,
Blue as his lovely western skies,
Whispering softly, "Grandma, rise!"

Here's Frankie, Jack, and Geo. and Chris.,
And Susie, too, our little sis,
Waiting to give Grandma a kiss;
For this was Grandma's natal day,
And they had twined a garland gay
To make old Grandma a Fay!

So to the bower I had to go,
Quite pleased to think they loved me so,
How could I say the darlings, no?
And full of glee they marched along,
A little regiment twenty strong,
A laughing, happy, merry throng.

And there a wreath awaited me,
As lovely as a wreath could be,
Of Daisies, Jasmine, and Sweet Pea;
They placed it gently on my hair,
Then hip, hurrah! rose in the air,
But, oh, my heart it felt soe sair.

I wept and laughed, and laughed and wept,
A sad, sad anguish o'er me crept,
My slender thread of life nigh nipp'd.
A tower of memories on me piled,
I thought I was again a child
Roaming 'mong the heather wild,

Laying in my native Fins,
Gathering bloom frae off the whins
And rushes, where the burnie rins.
A moment, and the spell was o'er,
Old Grandma was their Fay once more,
The blithest of the pigmy corps.

With crown of flowers up in her brow
Her staff was turned to sceptre now,
And then was held a grand pow-wow.
I wished to see them all rejoice,
But, oh, the wild discordant noise
That came from those wee drummer boys!

Enough to throw their Fay in fits,
Rosy, rollicking, darling pets,
Splendid five-year-old cadets!

Montreal.

GRANDMA GOWAN.

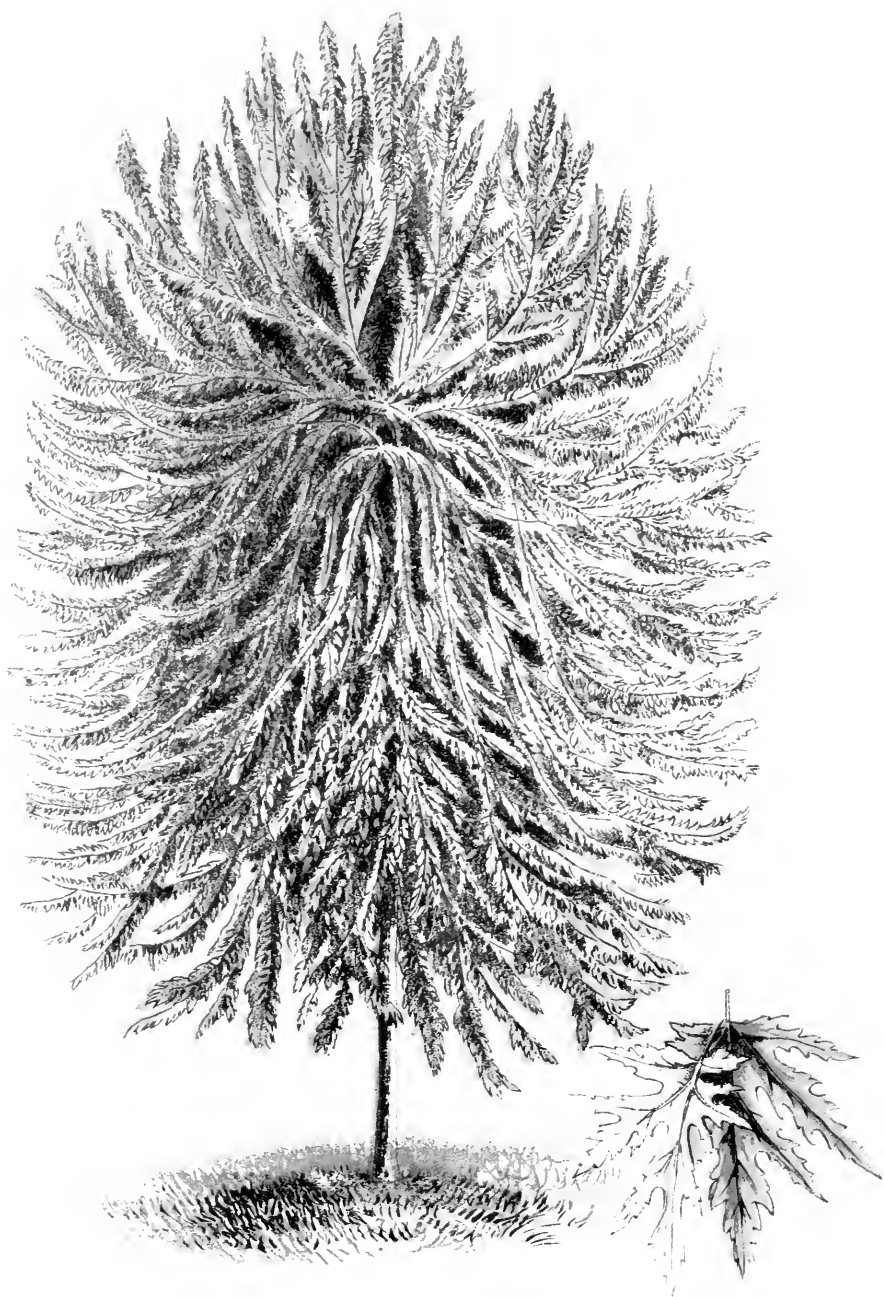
AMARYLLIS HALLII.—The new *Amaryllis Hallii* is hardy and very beautiful: it makes its foliage early in spring, and after maturing it dies down. Late in the summer the flower stalks spring up almost like magic, so rapid is their growth, and

produce a number of pink blossoms, unlike any other amaryllis or lily. It is a great acquisition to the list of hardy bulbs.

A NEW SHRUB.—*Lespedeza bicolor* is a charming lawn shrub from China and Japan, perfectly hardy, with fine acacia-like foliage and abundant long sprays of rosy purple pea-shaped flowers, which show to advantage when contrasted with its dark green foliage. This is an excellent shrub for small places, as it seldom exceeds five feet in height.—*Philadelphia Press*.

TO KEEP ROSE-BUSHES FREE FROM INSECTS.—J. H. Woodford said that he keeps insects from his roses by dredging the bushes with hellebore early in the morning, before the buds form, which kills the first insects that come; then again before they bloom, and again after blooming. These three applications are sufficient.—*Proceedings Massachusetts Horticultural Society*.

SOUTHERN CULTIVATOR.—The advent of of June brings to our table that old and standard publication, *The Southern Cultivator*, for the current month. While it has seemed in the past not possible to improve it, the varied and valuable table of contents of the present number is conclusive evidence of its improvement. Its readers can but approve of its present get up and make up. They will find valuable suggestions and information in "Thoughts for the Month." It is not possible, in the limits of a newspaper article, to enumerate the large number of articles of marked interest and decided importance. Every department is full, while the editorial department shows a freshness and vigor that commend it to the thoughtful and progressive reader. To be appreciated, *The Cultivator* must be read; if it is read it cannot fail of being appreciated. The article on "The Experimental Farm at Vincennes" is worth a year's subscription. We urge it as a matter of self-interest that every reader of our Journal send \$1.50 to Jas. P. Harrison, Business Manager Cultivator Publishing Company, Atlanta, Ga., for a year's subscription, or if they prefer we will send our paper and *The Cultivator* one year for \$2.25.



CUT LEAVED MAPLE.

PAINTED FOR THE CANADIAN HORTICULTURIST

THE Canadian Horticulturist.

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[No. 10.]

THE CUT-LEAVED MAPLES.

We present our readers this month with a colored plate of Weir's Cutleaved Maple. Fully a dozen years have passed since this tree was introduced to the tree planting public, and although it is perfectly adapted to our climate, and thrives almost anywhere, one seldom meets with a specimen growing among the trees on our lawns. Our neighbors over the border have planted it very generally, so much so that it is regarded as one of their most popular ornamental trees. It would not be very surprising to us, judging from its rarity here, to learn that a large proportion of our readers were quite unacquainted with its appearance. To them at least the colored plate will be a new revelation, making them acquainted with a maple whose foliage and habit are among the maples, what the Cutleaved Birch is among the birches.

This tree is a variety of the Silver Maple. The form of the leaf varies from that of the type in being much more deeply cut, as will be seen by a glance at the leaf shown on the plate, where the contrast between the color of the upper and under sides, as well as the peculiar shape of the leaf, is well brought out. The young shoots are

also much longer and more slender, hence more drooping in habit. Like the parent Silver Maple it is of very rapid growth, and its delicately cut leaves have the same silvery whiteness on the under side, which gives name to the species. The leaf stalks are long, and tinted with red on the upper surface. The contrast and blending of these varied colors, when the long slender branches are swaying in the wind, are very pleasing. An avenue planted with this cutleaved variety would be a very attractive and interesting feature of any of our cities.

Another cutleaved variety from seed of the Silver Maple originated in the grounds of Messrs Ellwanger and Barry. It is quite upright in its style of growth, and the young shoots have none of the slender, drooping habit which is such a distinguishing feature of Weir's. The leaves are remarkable for great diversity of form, some of them are even more deeply cut than are those of Weir's, and others again will be but slightly lobed. This also is a very rapid growing tree, a feature so generally desired by planters in these hurrying days.

A third variety, raised in the grounds of the same establishment and from seed

of the Silver Maple also, having much the same habit of growth as the one last mentioned, is remarkable for having its leaves lobed almost to the midrib in such fashion as to give to the leaf a three parted appearance; hence it has received the name of three-parted Maple.

There are also cutleaved varieties of the Norway Maple. One of these has its leaves divided into three parts much after the style of the one last mentioned. Another is known as Lorberg's, which differs but little from the preceding. The most distinct and unique cutleaved variety of this species of maple is known as the Eagle's Claw. The leaves of this are not only very deeply cut, but the divisions are very sharp pointed, giving to them such a marked resemblance to the claws of some large bird of prey, that it is very appropriately designated by the name it bears.

These maples, as indeed is nearly all the genus, are hardy, enduring our climate perfectly: they flourish in almost every soil, are seldom defoliated by insects, and are withal very ornamental.

NOTICE TO NEW SUBSCRIBERS.

If any of our new subscribers desire to have the Report of the Fruit Growers' Association for 1884, and the *Canadian Horticulturist* for 1885, Vol. VIII., complete, by remitting sixty cents additional these will be forwarded to them post-paid. For \$1 60 you will receive the Report for 1884 and for 1885, and the *Canadian Horticulturist* for the years 1885 and 1886.

CANADIAN HORTICULTURIST FOR 1886.

PREMIUMS FOR OBTAINING NEW SUBSCRIBERS.

We desire to extend the circulation of this magazine to at least double the present issue, and appeal to our readers to help us. We think you can unhesitatingly recommend it as being fully worth more than the subscription price to every one who cultivates even the smallest garden. In order to make you some return for your kindness in procuring new subscribers we will send you any one of the following collections of bulbs or plants on the receipt of five new subscribers and five dollars, namely:—Collection No. 1, one *Chionodoxa lucille*, one *Lilium longiflorum*, two *Fritillaria meleagris*, two Spanish Iris, and two *Narcissus poeticus*; No. 2, five Tulips, two Chinese Peonias, one Spotted Calla, one Tiger Lily; No. 3, a collection of five different lillies; No. 4, a collection of five different sorts of Iris; No. 5, two double and two single Hyacinths, and three double and three single *Narcissus*; No. 6, five herbaceous perennials, *Fraxinella*, *Blyanthus*, Japan Anemone, Japan Spirea, *Climatis erecta*; No. 7, three hardy flowering shrubs, *Hydrangea paniculata*, *Spirea Van Houtte*, and purple Fringe; No. 8, twelve papers of flower seed of different sorts.

For ten new subscribers and ten dollars we will send any two of the above collections that may be desired, or if preferred will send one yearling tree of the Russian Vladimir Cherry, the stock of which was imported by the Fruit Growers' Association direct from Russia.

Every new subscriber will receive the *Canadian Horticulturist* from the time his subscription is received until the end of the year 1886, also the Report of the Fruit Growers' Associa-

tion of Ontario for the year 1885 as soon as it is printed, and which ever one of the following articles he may prefer to have sent him in the spring of 1886, namely, either (1) three plants of the Atlantic Strawberry, or (2) a yearling tree of the Russian Yellow Transparent Apple, or (3) a plant of the Lucretia Dewberry, or (4) a yearling Vine of the Early Victor Grape, or (5) two plants of the Marlboro' Raspberry, or (6) a package containing three varieties of flower seeds. These will be sent by mail prepaid to the subscriber. The collections mentioned above will be sent prepaid to the address of the person who remits the money and new subscribers names.

THE ANNUAL MEETING

Of the Fruit Growers' Association of Ontario was held in the Town Hall, Wingham, on the 16th and 17th of September, 1885; at which the following Officers were elected for the ensuing year, namely: President, Wm. Saunders, London; Vice-President, A. McD. Allan, Goderich; Directors: John Croil, Aultsville; A. A. Wright, Renfrew; J. R. Dunlop, Kingston; P. C. Dempsey, Trenton; Thos. Beall, Lindsay; W. E. Wellington, Toronto; Murray Pettit, Winona; A. M. Smith, St. Catharines; F. Mitchell, Innerkip; J. A. Morton, Wingham; J. M. Denton, London; W. W. Hilborn, Arkona, and Charles Hickling, Barrie. Auditors: Charles Drury, Crown Hill, and James Goldie, Guelph. Secretary-Treasurer: D. W. Beadle, St. Catharines.

WANTED.

A few copies of the January number of the *Canadian Horticulturist* for 1882, Volume V. We will send in return therefor Vol. I., II., III. or IV. complete, if desired.

EASY LESSONS IN BOTANY.

BY H. B. SPOTTON, BARRIE.

LESSON IV.

For this lesson we shall require a lily of some kind—any variety found in the garden will do, or in spring-time our native Dog's-tooth violet will answer the purpose admirably—and a specimen of the well-known Calla, popularly regarded as a lily also, though not at all related to the true lilies. If you have the common tiger-lily at hand, and can procure a complete specimen, root and all, you will find at the very base of the stem a swollen mass, made up chiefly of fleshy white scales, from the midst of which the stem ascends. These scales may all be removed in succession until nothing is left except the flattish piece to which they are all attached by their lower ends, and from the lower side of which the large fibrous roots are given off. These scales are fleshy underground *leaves*, and a mass of them such as we find here is called a *bulb*. You will at once think of the onion, with its coats which can be peeled off one after another, as another instance of a bulb, and of the tulip, hyacinth, &c., as masses of similar structure. The stem of the lily, then, rises from a bulb, and in the plant now before us numerous leaves are developed on the sides of the stem. These leaves, when compared with any of those belonging to the plants already examined, show very marked differences. There is no appearance of a petiole, and as the blade is attached directly to the stem the leaf is said to be *sessile*. The veining, you will see, is peculiar. Here there is no network such as we found in the other leaves, but the veins run the whole length of the blade without branching. This arrangement of the veins is described by the term *straight-veined*. Many other instances of this mode of veining will also occur to you. Every

blade of grass is an example. The leaves of the Calla, also, are marked in the same way.

The flowers next invite our attention. You see that they are produced near the end of the stem, but as each of them arises from the axil of a bract the inflorescence will be described as axillary. Whilst you are looking at the upper part of the stem you will doubtless notice the little black bodies in the axils of many of the leaves, and perhaps will wonder what they are. If you dissect one of them with a sharp knife you will discover it to be a bud, a good deal resembling the bulb in its structure; it is, in fact, what is called a *bulblet*, and if you look about the old plants in the spring you will find that the bulblets which have fallen to the ground in the autumn have sprouted and produced new plants. In the flower of the lily the showy part consists of six similar pieces, curved backward, or *recurved*, as the botanist says. These six pieces are in two sets of three each, one set being outside the other, but as they all so closely resemble each other it will be better not to call one set the calyx and the other the corolla, but to describe the two sets collectively as the *perianth*. In that case, though the parts are all separate, we can not very well use either of the terms *polysepalous* or *polypetalous* to describe that fact, but shall adopt a new term, *polyphyllous*; and so also, if we find the parts of a perianth joined together, we shall use the term *gamophyllous* to describe that fact.

The parts of the perianth will be found to be attached to the receptacle.

The stamens are six in number, and you will observe that the anthers are attached by their centres, and swing freely about, discharging great quantities of dark brown pollen. Anthers which swing about in this way are said to be *versatile*.

The pistil has its three parts, *ovary*, *style*, and *stigma*, well marked. The upper part of the style and the stigma are three cornered, and the ovary is six-lobed. If the ovary be cut across it will be found to be three-celled, with two rows of seeds in each cell.

Now it is desirable to notice the prevalence of the number three in relation to the parts of this flower. The perianth is in two sets of three each; so are the stamens, and the ovary clearly consists of three carpels. The flowers of our first group of plants had not their parts in threes, but for the most part in *fives*. So that we have now discovered at least two important differences between the lily and the other plants examined: first, in the veining of the leaves, and secondly, in the number of parts in each floral whorl.

Now we may turn to the Calla, which by the way is not properly a Calla, but a *Richardia*, from South Africa. The leaf-stalks and the scape which bears the brilliant white lily-like growth at its summit may be easily traced downwards to their origin in a thick underground stem, which differs from the lily-bulb in being a solid mass, incapable of being separated into scales or coats. This underground stem of the Calla is a kind of *tuber*, not altogether unlike a potato in its structure. The leaves, you observe, are straight veined, but, unlike the lily leaves, have both blade and petiole.

We are chiefly concerned, however, with the flower. The white showy part is in one piece, enfolding below a curious kind of stalk or column, and expanding above. Let us carefully remove this lily-like leaf, so as to completely expose the column it contains. The lower part of this column is now seen to be crowded with small greenish bodies, whilst the upper part is surrounded by innumerable yellow pro-

jections, which on closer inspection turn out to be *anthers*. The greenish bodies at the base on examination prove to be *ovaries*, so that we have here an entirely novel arrangement of stamens and pistil, these organs being crowded together about a fleshy column or axis. Such a column is known as a *spadix*, and the white leaf which we removed is merely a kind of bract, and not a calyx or corolla, as you would at first probably suppose. Such special bracts as these, surrounding a spadix, are known as *spathes*. If in the spring you can find a specimen of Indian Turnip, or of our common Marsh Calla, you will see that the structure of the flowers is similar to that which we are now examining.

The lily, then, with its colored perianth, is a type of one group of plants, while the Calla, with its spadix and spathe, is a type of another group. In both, however, the leaves are straight-veined, and there are also some other resemblances which will be pointed out presently.

CORRECTION.

We do *not* need any copies of the January number of this year. The year 1885 is an error, it should have read 1882, Volume V.

THE FOUNDLING APPLE.

Doctor Haskins says, in the *Rural New-Yorker*, that this is the apple which has become quite popular in Lower Canada (Province of Quebec) under the name of Late Strawberry; that it originated in Groton, Massachusetts, and that the tree is of slow growth and ungainly in form in the nursery, not long lived but very productive, ranking in hardiness about with the Fameuse, but not a true iron-clad.

ONTARIO STRAWBERRY.

Mr. John Little, of Granton, our Strawberry King, says of this variety that the plant is healthy, foliage good, fruit large to very large; by early picking it would ship a good distance. I can recommend the Ontario, after two years' fruiting, as worthy of dissemination.

THE CENTENNIAL CHERRY.

Last July we received through the mail a little tin box in which we found a number of fine cherries, every one of which was perfectly sound and in excellent eating condition. It transpired that these cherries had been sent to us from Napa City, in California, and had taken this long overland journey in the mail bags during the hot weather of that month, and had come through without injury. We found the fruit on sampling it to be very firm fleshed, sweet, rich, and of excellent flavour.

It was sent us by Messrs. Coates and Tool of that City, who inform us that it is a seedling from the Napoleon Bigarreau, that it first bore fruit in 1876, from which circumstance it derives its name. The tree is said to be a heavy grower with coarse wood, and very glossy, shining leaves; fruit spurs to be developed on many trees at one year from the bud; its habit low and spreading, and thus far an early, abundant and regular bearer. The Cherries are large, of a pale yellow color splashed and marbled with crimson, the flesh very firm and sweet, with a small stone.

If the tree should prove to be sufficiently hardy to endure our climate, and the fruit exempt from that tendency to rot so often found in our sweet cherries, we believe that this would be a most profitable Cherry to plant for market.

QUESTION DRAWER.

(1.) Some two years ago I noticed in the *Horticulturist* some mention of fruit culture in Algoma, and would be glad to hear what kinds have fruited there after the severe test of last winter.

(2.) Also I have heard parties argue that it is very important in transplanting to mark the trees, so as to keep the same side to the north as before. Is this of any consequence?

HENRY J. BIRD.

(1.) Will our readers in Algoma please reply to this inquiry.

(2.) If any have made experiments by way of testing the importance of marking the north side, will they please to communicate the result. We have never paid any attention to this matter of the north side when transplanting.

DEAR SIR.—I have a few questions to ask, the answering of which through your valuable and interesting journal will greatly oblige.

1. Many of my Cuthbert and Turner Raspberries have had some insect working on them doing much damage; the grub works round the cane in rings, generally two, about an inch apart, just below the skin, which prevents the sap rising, causing the shoot to wither up and fall off. What is the best remedy—cut the shoot off and burn it?

2. When is the best time to use ashes to my strawberries and bushes, spring or fall, and about what quantity may I use (with safety) to each plant and bush?

3. I find that in the January number of the *Canadian Horticulturist* you speak and give an illustration of a large yellow gooseberry, "The Large

Golden Prolific." Have you fruited it and found it as represented?

4. Let me know the best red gooseberry.

5. When is the best time to take root-cuttings of black-caps, and the method of taking them; is it merely dividing the root between the canes, leaving the canes with so much root attached?

Yours respectfully,

E. ROBINSON.

London South, Ont., Aug. 17, 1885.

REPLY.—1. This is done by the raspberry cane-borer. See Saunders' "Insects Injurious to Fruits," page 305. If you have not a copy you are without one of the most valuable books written for fruit growers. A copy will be sent to anyone, post paid, who will send us twelve new subscribers and the twelve dollars. The best remedy is to break off all the withered twigs at the lowest ring and burn them.

2. The spring is probably the best time; yet the time, fall or spring, is not a matter of much importance. The quantity depends upon the strength of the ashes, whether leached or unleached, whether from hard wood or soft wood; and upon the size of the plant or bush. Try a small quantity—a gill, or a pint, or a quart—graduating it according to the size of the plant and the strength of the ashes, and if you think after the trial that more would be better, then increase the quantity slowly.

3. We have not fruited the Golden Prolific Gooseberry.

4. Hitherto the Crownbob has been considered the best red *English* gooseberry. Lately the Industry has been

advertised as the most prolific, and not subject to mildew. The best *red American* gooseberry that we have tested is the Houghton.

5. We have never propagated Black-cap Raspberries from root-cuttings or division of the stools. The growing canes root freely at the tips in the autumn. These rooted tips are taken up in the spring and planted.

WHAT THE PEOPLE SAY.

NEW STRAWBERRIES.

(To the Editor of the Canadian Horticulturist.)

There is always a risk in buying new varieties of the strawberry, and those who love this fruit, so pleasing to the eye and taste, will run the risk for better or worse.

If there is any fruit outside of Eden's lovely garden that sin has not marred its beauty, it is the strawberry.

I have tasted every variety that has been offered to the public, and some that have not been offered yet; and some have not proved satisfactory here.

If we only had a testing plan in Canada like the *R. N. Yorker's*, and have the patience to await the decision of such men as President Saunders, Beadle, Dempsey, Croil and Bucke. But until we get this boon let us be sparing in our investing much in new varieties without the recommend of such parties as the *R. N. Yorker*, President Lyon, M. Crawford, C. A. Green, R. Johnston.

In 1884 I got the following varieties :

Prince of Berries.—Like all of Durand's seedlings it requires the best of cultivation, and more care than most men can give who grow largely for market. The berries are large in size and beautiful in color; plant healthy; late in fruiting; not profitable here for market.

Atlantic.—This has proved the most profitable here of all the new varieties of 1884. Plant vigorous and healthy; foliage large; very productive; berries large and good.

Legal Tender.—The fruit is from medium to large; uniform in shape; firm, rich color; not very productive; pistillate.

Iron-Clad.—The plant of this variety would please any man (or ought to). It is the strongest grower we have, making large stools; color light green; fruit large, firm; ripens early.

Vineland.—A vigorous, healthy plant; more so than Kentucky, which it resembles in fruit and plant.

Conn. Queen.—Late, vigorous, and a good bearer; color not bright enough for market.

Lawn.—A healthy plant; productive; berries all shapes; quality not the best.

Cornelia.—I have fruited this variety the first in Canada, but will give the experience of others about it:—A very late berry of great merit; the plants are large and stocky; the fruit is in shape and size like the *Jucunda*, very firm and of good quality. The *Cornelia* will be a profitable market berry, for the reason that it has the market mainly to itself.

The new varieties of 1885 :

I have not fruited yet the one disseminated by reliable men, none having any pow-wow over them but the Parry.

The *R. N. Yorker* says:—"Parry gives us our earliest and finest berries this year." The foliage is scanty, and does not seem to ripen the fruit late in the season. A light bright crimson in color; the quality is not so good as the *Prince of Berries*.

May King.—A seedling of the Crescent, with perfect blossoms, and said to be even earlier. Plants vigorous, healthy and productive; fruit large, bright scarlet, and best quality.

Jewell.—A seedling of P. M. Augur & Son's now offered for sale this fall. They sent me some plants this spring. The plant is large and healthy, and a good grower. The *R. N. Yorker* says, June 21st:—"Jewell is now in the height of ripening. The peduncles are strong and bear from 5 to 14 berries; some plants have from 4 to 5 peduncles, so that such plants may be said to be laden with fruit. No other has ever given us more fruit to a given length of row."

Amateur.—June 25th—Amateur is very prolific; the berries drop from the peduncles rather too easily; the color a light red, the flesh white or rose-colored; they are regular in shape, and the quality is somewhat better than Jewell.

Hathaways, Nos. 3, 5 and 9.—These were sent me by President Lyon in 1884. They fruited here this season; they did not ripen here till June 22nd; they did about the same here as at the *Rural* grounds. I would not like to give a verdict on No. 3 until another year's trial. No. 5, color brilliant crimson, shape conical, quality excellent, plants vigorous and fruitful. No. 9 began to ripen a few days after No. 5. Plant very vigorous; a nice berry; color red, golden seeds, which makes it look very handsome.

Needle's Seedling, Iowa.—I got these at the same time as Hathaways. Plant a dark green; not very stocky, but healthy; very like the Wilson both in plant and fruit, but commenced to ripen with the Crescent and gave more or less fruit to the end of the season.

Crawford's No. 6.—Not yet offered for sale. I like to be among Crawford's seedlings, they respond so quickly to my soil and care. I have no interest in plants sent me for trial beyond truthfully stating how they have done here. No. 6 is a very large berry, well formed, bright red, and good quality. I have

not yet grown anything to beat it for size and beauty, and sold by weight all other varieties would be in the shade.

R. Johnston's Seedling, "Ontario".—I have fruited it for two years. From our experience with it we believe it is worthy of all he claims for it. The blossom is large; stamens being very strong, securing perfect fertilization, and as it is quite firm its large size and bright appearance recommend it as a market berry.

Respectfully yours,

JOHN LITTLE.

Granton, August 24, 1885.

EXPERIENCE FROM THE COLD NORTH.

The winter of 1884-'85 is one that will linger for years in the memory of fruit-growers as one of disaster and disappointment; yet at the same time it is one replete with knowledge most valuable to the professional fruit grower as well as to the amateur who chances to reside in a cold northern clime.

It is particularly disheartening to cultivate your fruit-bearing trees successfully for several years, and then, just when you begin to hope and believe that you have at length secured a collection of trees that will withstand the rigor of your climate, to have one of those "test winters" come moving along and sweep nearly all before it. Such an one is that through which we have just passed.

We have learned, however, that in apple trees the cold-resisting powers are greatest in the following:—

The *Wealthy* must stand at the head of the list. On every side we hear nothing but good reports of its hardiness and excellence of fruit. So far at least as we now know it is the longest keeper we can grow, and is in every respect a most desirable tree to plant.

The *Yellow Transparent*, too, came through the past season without the

loss of a single bud, and my trees are now (August 20th) laden with beautiful golden yellow fruit almost ripe enough for the harvest. It is the earliest ripener I have yet grown, and being undoubtedly hardy is a very valuable and desirable tree to plant.

The *Peach of Montreal*, as well as the *Alexander*, can also be highly recommended for extreme northern sections.

You will doubtless be surprised to learn that the *Duchess of Oldenburg* has this season not sustained its well-earned reputation for hardiness and endurance of extreme cold. Mine are not dead, but strange to say that in the spring they failed to leaf out as usual, but instead there came quite a profusion of blossom, which soon died away, leaving only a bleak, leafless tree, having all the appearance of a dead worthless thing. In about three weeks, when the later rains came on, signs of returning life were to be seen, and in the course of time new leaves appeared, and although there is no fruit I have hopes that the trees will yet survive and be of some use to me.

I may add that this is exactly the experience of several of my neighbours, and applies not only to the *Duchess*, but also the *Tetofskey*, *Scott's Winter*, *Canada Baldwin*, *Magog Red Streak*, and several other so-called ironclads.

The death-rate, however, is not confined to our older varieties, but sad havoc has been made among the Russians.

Experience here goes to show that these are not all by any means hardy, but only after years of trial shall we be able to know those that will withstand our climate.

I may here state that I have just received a letter from Mr. Wragg, of Iowa, in which he also states that "a very considerable weeding will have to be done among the Russians before we

shall know just what to plant." I have not yet received reports from all the trees of this kind that have been planted in this section, but enough is now known to warrant me in saying that *Cardinal*, *Belle de Boskoop*, *Peter the Great* and *Red Russian* are entirely worthless for this section, and the same can be said of several more that are known to me only by numbers.

Among a consignment of those trees received from Prof. Budd there were half a dozen pears. They came without any number or name, and they were given no great attention, as I do not care to have a fruit the name of which I cannot tell. However, they have so far done remarkably well—living through last winter without the loss of a single bud, and as they are all Russian varieties I am hopeful of something that we have been so long and so anxiously looking for, viz., a pear that will live and bear fruit in our northern home. If we have found it, it will be an acquisition indeed.

More anon. A. A. WRIGHT.

Renfrew, August 20th, 1885.

THE FRUIT GROWERS' ASSOCIATION.

Dear Mr. Secretary,—I find that my horticultural life would be incomplete without membership in an institution so useful and so national. I think it is quite safe to say that the Fruit Growers' Association of Ontario with its organ, the *Canadian Horticulturist*, well represents and gives body and voice to the spirit of rural refinement in Canada. But more than that, it is a factor of the highest value in developing those sources of wealth and of beauty, which together more than any other thing must yet make our Canada the most delightful land in which to live.

Yours truly,
S. P. MORSE.

Milton, August, 1885.

STRAWBERRIES AND RASPBERRIES.

I commenced our picking of the strawberry on June 19th. The Crescent still takes the lead, and this year the choicest fruit I ever had from this variety, and sold at twenty cents per quart. The next in ripening was Phelps or Old-Iron Clad. Remarkable for its large size and very productive. Next Wilson's Albany, a medium crop of medium size berries. Whatever it may do in other places, it does not succeed here. Mr. Piper set the following this season: Jumbo, Big Bob, Col. Cheney, Sharpless, Jas. Vick, and some others. Manchester, a splendid berry and plenty of them. Daniel Boone, one of my favorites, an old friend, and one that keeps its size to the last.

Captain Jack—Plant and berry all that can be desired. Berry larger than the Wilson, more of them and better flavor. Kentucky and Vineland resemble each other, both late, of good size, rather soft for shipping a long distance. I have been testing more of the new varieties, and all prove worthwhile here, except the Atlantic.

There has been an extraordinary crop of the strawberry in our locality this year, and after all prices ruled so low it did not pay the cost of labor attending them. I have not found prices so low before, down to four cents a box. Growers from a distance came to our local villages and almost giving them away, putting this healthful, luscious fruit in reach of both old and young in town and country.

I am sure the readers of the *Horticulturist* must be pleased with my friend Robinson's article on his experience with the strawberry this season. From his long list of varieties the most fastidious might select what would please them.

There are two varieties in his list that he is wide of the mark in comparing them with the old sorts he men-

tions. Jocky Cap colors all at once, whilst Miners Prolific shows the white feather in his tail, and does not ripen evenly. There is no resemblance in the two varieties in either plant or fruit. And the Howell looks more like the Manchester, but is not. In respect to these his judgment is hasty and too soon.

RASPBERRIES BLACK.

In raspberries there has been a ready market here and prices good without foreign competition, there also has been a very fair crop. The first to ripen was Tyler. I prefer it to Songhegan, as it was subject to rust. Hopkins a little later and berry a little larger. Then comes Ohio, the best of the three here every way. There is not much demand for the Red Raspberry here, the wild ones are so plentiful, but still we grow such as Arnold's Red, Rader, Cuthbert, Rancocas, Hansell. This one has done well, owing, as I suppose, to the plants being more mature.

JOHN LITTLE.

Granton, August 9th.

GRAPE GROWING IN CENTRAL ONTARIO IN THE FUTURE.

There is at present reasonable grounds for expecting a fairly good grape crop in Central Ontario this season. If this expectation is realized it will do much to confirm the opinion which is so rapidly gaining ground respecting the capabilities of this Province for the production of wine, and of its being one of the most profitable branches of husbandry suitable to the soil and to the climatic conditions of large tracts of land in Ontario. "Live" men are already looking about them for suitable lands for vineyard purposes on which large sums of money will undoubtedly be soon invested.

But few persons comparatively have any clear idea of the profits resulting

from a judicious investment in this business. Farmers no doubt would be well pleased if they could be assured of say 30 bushels of wheat to the acre, and especially so if they could also be assured for many years in the future that they would obtain \$1 25 per bushel therefor. Yet in this case the gross sum realized per acre would amount only to \$37 50.

A vineyard producing a crop of grapes proportioned to the yield of wheat, even if sold at the small sum of *one cent per pound*, would produce over \$100 per acre.

Now we have—as shown in pp. 80–82 of the present volume of the *Canadian Horticulturist*—an almost unlimited area of land in Central Ontario, where both soil and climate are more suitable for the profitable production of grapes than that of the larger portion of the wine-producing countries of Europe. Scott Act speakers are already predicting an over-supply of grapes for dessert purposes at an early date, and fear (? wouldn't they like it) the surplus may be made into wine. We have no sympathy with such croakers, and sincerely hope the time may soon arrive when a very small proportion of the grapes grown in Ontario will suffice for dessert purposes for all our people, even though excellent fruit may be obtained at five or six cents a pound. The balance can then be made into wine, for which purpose good sound grapes are worth from 3 to 5 cents per pound. For Canadian wine there is an unlimited demand; England alone will be glad to get all Ontario can produce for generations to come, and at highly remunerative prices.

The vineyardist may therefore reasonably expect that for generations to come from \$300 to \$500 per acre per annum may be realized from his vineyard if he sold his grapes to the wine-maker, and yet a larger sum if he became his own

wine-maker. At the price of grapes given above, say from 3 to 5 cents per pound, a much better and more wholesome wine can be produced for less than \$1 per gallon than can usually be obtained in our markets.

Wine has been made in this vicinity by amateur wine-makers for many years past which has been pronounced by connoisseurs to be “good sound wine,” many dozens of bottles of which have been sold in Montreal at more than double the price above named.

THOS. BEALL.

Lindsay, August, 1885.

BLACK RASPBERRIES FROM LAYERS.

I notice one of your correspondents wants to know if Black Cap Raspberries can be grown from layers. I answer, “Yes.” I have grown all mine that way, and consider it the best.

F. W. PORTER.

Mount Forest.

FRUIT NEAR MOUNT FOREST.

All small fruits around this part of the country are a plentiful crop. Plums are nearly a failure, the more tender sorts are dying off from the effects of last winter's frost, even the hardy Lombard did not escape altogether. I don't consider the much puffed *Arctic* plum to be hardy at all; mine got nearly killed the winter before last, and this last winter finished them. Neither is the Wealthy apple hardy with me, it too got cut to the ground these last two winters, although it still lives and has made good growth this season. (See page 224.) But the most complete fraud of the so-called Iron-clads is the Russian Mulberry. With me it would not stand a summer's frost. The Catalpa sent me by the Fruit Growers' Association this spring is doing first-class so far.

F. W. PORTER.

NOTES ON STRAWBERRIES.

The strawberry crop has this year been the largest ever gathered in Canada. Prices were low, but those who grew good fruit and sent it to market in nice clean packages in good condition, had no difficulty in disposing of their crop at paying prices.

They were very late: I made my first shipment, June 25th; and last shipment, July 24th.

First to ripen were *Early Canada* and *Old Iron-clad*, both of which are quite promising where locality suits them. They bloom very early, hence, are often injured by late spring frosts. *Old Iron-clad* is the best very early berry I have seen: fruit bright scarlet, of good quality, about the size of Wilson, and about four days earlier than Crescent.

Crescent Seedling is much the best and most profitable market berry I can find, fruit of better color than Wilson, ripens several days earlier, and much more productive. Although not quite so firm, it will stand shipping very well, will average perhaps a little larger than Wilson on my soil, (clay loam) grown by the matted row system.

Wilson still holds a place in every well selected list of strawberries for market.

Capt. Jack is a splendid variety on clay loam, it is quite late, will average larger than Wilson; bright color, of good form, very hardy and productive; as firm as Crescent, does not do so well on sandy soil.

Among those of more recent introduction *Manchester* is perhaps the most promising. It is quite late, fruit large, light scarlet, of good quality; very productive, holds out well to the end of the season. Not firm enough to carry to a distant market, but for near market (say fifty miles) it is one of the best to plant in every plantation.

Daniel Boone ripens about midsummer. Fruit will average large and very even in size, fine bright scarlet, about as firm as Manchester; one that you need not be afraid to plant on either sand or clay loam, for either home use or market. I had it in full fruiting two seasons, this year I had over one-half an acre, and shipped them as far as Detroit (ninety miles) in perfect condition. No sort in my collection looked so well in the crate as Daniel Poone.

James Vick must be grown either in hills or very narrow matted rows to make them profitable: they set more fruit than any variety can bring to perfection when grown in the ordinary matted row. I had about three-fourths of an acre this season, but allowed most of the rows to get too wide, hence the fruit was too small; but where grown in hills or very narrow matted rows, it produces a great crop of very bright scarlet fruit, about as firm and large as Wilson. Begins to ripen quite late, and holds out as late as any.

The plant is one of the most vigorous and hardy of any sort grown.

Arnold's Maggie has, perhaps, given us the largest quantity of fruit to a given space, of any in the collection. It begins to ripen with Crescent, and continues quite late. Fruit large, first picking nearly as large as Sharpless; not firm enough for a market berry, and not of best quality. *Arnold's Pride* gives some very large fruit, not of good color or quality; it will not pay to grow it. *Bright Ida* not as good as Maggie, later, and not quite as productive.

Sharpless; largest of any, and quite productive some seasons. It will not pay to grow for market when we have so many varieties that are more reliable.

Bidwell is large and productive, but not firm enough for a good market berry.

Cinderella about like *Bidwell* in form and color; of better quality; not quite so large, but quite early.

Seneca Queen; very large and productive; good for home use, not firm enough for market.

Cumberland Triumph is one of the finest sorts for home use, plant very vigorous and hardy; fruit very large, of uniform shape, good quality, and productive.

Among the new varieties fruiting this season *Atlantic* gives promise of being the best late market berry I have seen among either old or new sorts. A berry must be *very* firm to make it a first-class late market sort, as late in the season weather is hot, and fruit ripens faster, hence, does not carry so well. The *Atlantic* is more firm than *Wilson*, in fact, it is the firmest berry I have ever grown; fruit quite large, conical, of a very rich, bright, dark red color, very productive, and altogether the most promising *late market berry* I have seen.

Ct. Queen. This new berry came to me from Connecticut as the best late market sort. I have had it in full fruiting condition, and find the plant most hardy of any; fruit of good quality, medium size, quite productive, not very firm, and of such a poor dull green color that will prevent it ever being planted to any extent.

Cornelia; another claimant for the latest market berry. I will have to give it another trial before saying much about it; must say that it has not come up to my expectations this year.

Woodruff No. 1. A new variety I received from Michigan, where it is said to be taking the place of *Wilson* as a market berry. Plant *very healthy* and vigorous, foliage somewhat like

Wilson, better grower. Late spring set plants gave some very fine fruit, quite like *Atlantic*, not quite so firm, about like *Wilson* in that respect. I shall watch it with interest.

Prince of Berries is by far the highest flavored berry I have seen. Although not as productive as many sorts, it will give a fair crop, and its extra fine quality will well repay all growers to plant a few of them. All who visited my plantation during the fruiting season voted it the best flavored berry they ever tasted.

With me it is a good grower, hardy, and fruit medium to large size, quite firm, late, of a rich dark red color.

Lacon is a very strong growing plant, fruit of good size and color, *very* productive, quite promising.

Jersey Queen, *Sucker State*, *Grand Duke*, *Vineland*, *Legal Tender*, *Oliver Goldsmith*, *Belle*, *Nigh's Superb*, *Hart's Minnesota*, *Finche's Prolific*, *Ray's Prolific*, *Big Bob*, *Longfellow*, *Warren*, *Piper's Seedling*, *Marvin*, *Primo*, *Sterling*, *Gipsy*, and *Miner's Prolific*, have some good points, but as there is so many other varieties with a greater combination of good qualities, I think they could be dropped from the list, and leave a sufficient number to choose from. It does not pay to grow too many varieties.

May King, *Parry*, *Wonderful*, *Amateur*, *Jumbo*, *Moodna*, and *Polopel*, I have not had long enough to fruit to any extent. *Wonderful* is a new variety from Ohio; its name is said to be taken from its *wonderful* productive qualities. It came to me so late this spring, and in such bad condition that I did not expect to see a berry, but it is a wonderful good grower and produced some very pretty, bright glossy scarlet berries of good quality.

W. W. HILBORN.

Arkona, Ont., Aug. 29th, 1885.

NIAGARA RASPBERRY.

The Raspberry received a year ago from the Fruit Growers' Association has fruited, producing very fine berries, better flavored (to my taste) and larger than the celebrated Hansell, but not so early. It made a very fine growth last season, so I had about twenty shoots for transplanting. All these have borne this summer. It has another advantage over Hansell in that it is not attacked by the Raspberry Sawfly, which makes skeletons of the leaves. At least it was not injured last year, while Hansell was. Neither have yet been hurt by this fly this season; but on the other hand I fear (although last winter was an exceptionally severe one) it is tender. One of my neighbors covered his, and it was killed to the roots. I did not protect mine in any manner, and strange to say it was only partially killed back. G. H. F.

Ottawa, 11th Aug., 1885.

WHITE FRINGE AND BIGNONIA RADICANS.

DEAR SIR.—I note your remarks in July number of the *Horticulturist* respecting the hardiness of Chionanthus, or White Fringe. I have had a specimen in my garden for some years; it is quite hardy in the severe climate of this region. Last winter, which was the coldest I ever remember, nearly all the plum trees and many of the apple trees were destroyed. The White Fringe had not a bud injured; it bloomed well in the beginning of July; it appears to grow rather slowly and keep the form of a low shrub, and is very pretty.

I saw a statement in the magazine that Bignonia Radicans was hardy; such is not the case here. I have repeatedly tried it, and always failed, it being killed to the ground about every third winter. Yours respectfully,

Guelph, Aug. 1st, 1885. GEO. ELLIOTT.

CULTIVATION OF HOUSE PLANTS.

(Read by Mr. John G. Barker before the Massachusetts Horticultural Society.)

Mr. Barker named as the first and most essential requisite for the cultivation of house plants, a good window facing the south; a bay window is preferable, as giving light on three sides. A glass door or sashes to shut off the window from the room is desirable, to exclude dust and cold draughts when sweeping or ventilating the room. Ventilation should always be given at the top of the window. Cleanliness cannot be too well attended to; it is as necessary to the health of plants as to that of our bodies. Washing the leaves with a sponge with water of the same temperature as the air of the room, as well as an occasional sprinkling on a fine day, which may be done with a small brush when a syringe cannot conveniently be used, will be a great help.

There is nothing more annoying to the cultivator of house plants than the green fly; smoking with tobacco is the best remedy, but however closely the partition between the window and the room may be shut, the scent will get into the room more or less. Therefore, use an infusion of tobacco made by filling a pail with stems and pouring on them all the water the pail will hold. This should stand twenty-four hours and be used in the proportion of half a pint to a pail of water. The plants should be turned bottom up, placing the left hand over the top of the pot to prevent accident, and then plunging it in the solution once or twice, until the flies drop off. Some of this solution should always be kept on hand and used on the first appearance of the green fly. After using, the plant must be rinsed in clean water, of the same temperature as the room. A florist in Philadelphia kept his plants clean in this way without fumigating. A scaley insect more common on

oleanders and other thick-leaved plants, adhering closely to the stems and leaves, is not so easily destroyed. These may be washed with whale-oil soap and water, or better, with Gishurst compound, an English remedy. A sponge dipped in a little sweet or kerosene oil, and wiped up the stem and under the leaves occasionally, will keep off the scale effectually. The speaker had applied this successfully to plants which had been neglected and got very dirty, using kerosene so freely as to have some misgivings how it would affect the plants, but they are now showing remarkably fine growth. The method given for destroying the green fly and scale will also be effectual for the red spider.

Injudicious watering is a great injury to plants; too much water is oftener the trouble than not enough. The soil on the top of the pot will indicate the need of water by looking dry, and, when water is given, it should be done thoroughly, and not in a mere dribble, that will not go half through the soil. No rule can be given for watering, except to give when the plants need it, and never without taking off the chill, if cold, by letting it stand in the room or adding warm water. Plants in warm rooms require to be kept moist at all times, but not saturated. As the days grow longer and the sun gets higher, and the plants begin to grow and flower, more water will be needed. For plants close to the glass a box filled with sphagnum, in which the pots may be plunged, will be of great help in keeping an even degree of moisture and avoid spattering the soil on the shelves and glass. *Lycopodium denticulatum* planted on the sphagnum, will give a clean green carpet for the plants, but must not be allowed to cover the soil so that it cannot be judged when water is required.

In regard to heat, a good rule is that when you feel comfortable yourself the temperature is about right for house plants, most of them being from temperate climates. But never be without a thermometer in the room; from 70° to 75° by day, and 45° at night, will be a good guide. The blinds should be arranged to slide between the shelves and the glass, and there should be outside shutters to put up in unusually cold weather. They should be light, and in small sections, so as to be easily put up by any one who happens to be at home.

As to the kind of plants, Mr. Barker recommended for each side of the bay window a vine of some kind, such as the variegated *Cobaea scandens* and *tropæolums*, or some of the *maurandyas*. One or more wires may be run up each side and over the top, on which to train the vines, and they may hang from the top in festoons. Then with some hooks in the top on which to suspend hanging baskets, the window will be well started. For these baskets, the *Saxifraga umbrosa*, better known as London pride, and the *Lysimachia nummularia*, or moneywort, though old and common, are very pretty; and with such other plants as good taste may dictate, the baskets will add much to the effect of the window.

A very pretty plant is *Torenia Fournieri*. The flowers are produced so freely as to form a complete bouquet; the habit is compact and the foliage dark green. It is an annual, and easily raised from seed. Callas are beautiful both in foliage and flower. Do not overpot them, for when pot-bound and well watered they bloom all the better. A very essential point in their culture is to give them a season of rest in summer by turning the pots on their sides under a wall or fence, keeping them there till they show signs of growth in fall; then shake off the

old soil and repot in new, and bring to the light and water.

Geraniums will be the standard plants. Of the many good varieties, Mr. Barker recommended for single—General Grant and *Orbiculatum*, scarlet; May Queen and Master Christine, pink; Miss Gertrude and Mrs. George Smith, salmon; and Paul Lucca and Snowflake, white. For double varieties—Bishop Wood, crimson shaded with cherry red; Henry Cannell, bright scarlet, and Mme. Thibaut, pink. A few pots of carnations will work in well. Though petunias are considered common, nothing makes a better show. A few pots of mignonette, sweet alyssum and candytuft will add to the fragrance.

As to the arrangement, the plants above mentioned, and all soft-wooded plants, should be placed nearest the light, and the hard or smooth-leaved, such as ficuses, gardenias, dracenas, coprosmas, and *Hoya carnosa* in the rear. The best hoyas the essayist ever knew was grown in a window, where it was stimulated with soapsuds as regularly as washing day came round, and the same with gardenias.

Among bulbs, hyacinths come first, and should be potted in November and December and placed in the cellar, or out-doors, where they will not freeze, covering up the pots entirely. Here they will root, and by bringing in a few every week or ten days after the first of January a display of these beautiful flowers may be kept up many weeks. Crocuses and tulips may be had in the same way if desired.

The oxalis, sparaxis, and tritomas must not be omitted, and cyclamens are admirable window plants, which should not be overlooked.

The plants mentioned have been named on the supposition that the grower has a good bay window. The floor of this should be a little higher than that of the room, with the lowest

point in the centre, and a pipe to carry off waste water from washing or watering. The pipe may run outside the wall or into a pail or barrel in the cellar.

For the north or more shaded windows, the oak-leaved pelargoniums, *Aloysia citriodora*, all the finer ivies, and many of the variegated-leaved plants will do well. Plant-cases are very desirable where a window cannot be entirely given up. An excellent plan for decorating a room is to procure a pan twelve or more inches in diameter and six inches deep; place in the centre a seven or eight inch pot, then place proper drainage and soil in the pan, and plant *Lycopodium denticulatum*, or any of the varieties of tradescantia, which will cover the surface and hang over the sides. In the pot in the centre put a plant of *Coprosma Baueriana*, dracæna, palm, or any which suits your fancy, and place the whole in a stand just large enough to hold it and set opposite the window, and with one or two brackets on each side of the window for such plants as you may choose, you have it decorated with very little trouble. A few cut flowers may be placed in the pan, and will last a long time. The vines will completely hide both pot and pan, and the centre plant can be changed whenever desired without breaking up the arrangement. If more than one is used in a room they should not be alike.

In potting, give plenty of drainage, and cover with a little moss or rough material to prevent it from getting clogged up. For if the surplus water does not pass off, the soil will become sour, the roots rot, and the plants die. For the plants recommended, a compost of one-third leaf mould and two-thirds of good turfy loam, with a little sharp sand, will answer well, adding a little fine manure for geraniums and other soft-wooded plants, and for the bulbs, especially the hyacinths, a liberal supply of well-decomposed cow manure.

APPLES IN ENGLAND AND AMERICA.

In relation to apples and popular varieties, Mr. Josiah Hoopes, a well known Pennsylvania authority, communicates the following to the *New York Tribune*. So thorough a competitive test was never before attempted as at the English Apple Convention of last autumn. It resulted in teaching our trans-Atlantic brethren at least one good lesson, and we may profit by it as well. Of the 1,545 varieties on exhibition, two were better than all the rest. To arrive at this conclusion each exhibitor was invited to name the best varieties of his district, for dessert as well as cooking, "so the whole of Great Britain was polled," and the result was: King of the Pippins headed the list for dessert, and Lord Suffield for culinary uses. The report is noticeable for the absence of American varieties, showing the importance of each country, and of each section as well, depending upon its own native kinds for a supply of fruit. No better evidence is needed of the truth of this than the fact that the King of the Pippins, mentioned above as the best dessert apple for England, is with us a very acid, poor fruit, unworthy of cultivation. The Ribstone Pippin, which I presumed was the standard for quality in English apples, comes third on the list, and is a fine fruit with us, although inferior to many of our own excellent varieties. The greater portion of the specimens on exhibition were taken from the dwarf bush and pyramid trees but a few years old, and very few from large standards such as are popular with us. The London Gardeners' Chronicle said to English readers: "Unless we are favored by warmer and drier seasons than the average of the last eight years, home-grown apples—whatever enthusiasts may say of our notions as patriots—will hardly be found profitable." With Americans

abundance of good apples is indispensable, and happily we have to spare for foreign friends less favored. Visiting a few years ago, a noted garden within a short distance of Edinburg, I was informed that "hundreds of people in the vicinity had doubtless never tasted an apple," and, judging from the care and expense bestowed upon the few trees I saw, the assertion could readily be believed.

THE VARIETIES OF THE COCKSCOMB.

Probably but few who admire the large, velvety, dark-crimson crests of the cockscomb, are aware that these are due to a malformation which has become fixed by cultivation. These combs or crests are sometimes of enormous size: some even have measured eighteen inches across. They show no distinct flowers. It not rarely happens that the parts of a plant, that are usually distinct and separate, grow together: it is not rare to find twin cucumbers, formed by two which are united for their whole length. This union often takes place with stems. Squash vines are sometimes found grown together for some distance, and a similar growth is often seen in the asparagus. The Cockscomb, *Celosia cristata*, is an annual, a native of the East Indies, and in its normal state produces numerous erect branches, terminated in time by long spikes of flowers. The numerous flowers themselves are small, and not at all showy, but each has at its base several bracts, or floral leaves, which are highly colored. These are usually dark-crimson, but there are white, yellow, and rose-colored varieties. In the form cultivated as cockscomb, the stems and branches are united and soldered together, as it were, into a confused mass, which is sometimes very wavy on the top. In the branching form, only the flowers on the lower portions of the branches are fertile; accordingly those

on the lower parts of the crest only, produce seeds. The velvety texture of the crest is caused by the ends of the numerous bracts that appear at the surface. Though these crests are monstrosities, the peculiarity is well fixed. This is one of the oldest of garden plants, having been cultivated in English gardens for over three hundred years. The variety known as Japanese, is peculiarly rich in color. To raise the largest crests, and of the most brilliant color, the soil must be excessively rich. The finest and largest specimens are produced by growing the plants in pots, and shifting them into larger pots as they need it. — *American Agriculturist*.

SETTING OUT CURRANT BUSHES.

The most important point in setting out currant bushes is to set them out. Set them where you can cultivate on each side of them, and not against the fence or wall. As often treated, currants are a nuisance. The bushes soon become stunted and covered with moss, the caterpillars destroy the leaves, and what few currants we get are small, unripe and nearly worthless. Why should they be otherwise? They are never manured, never cultivated or hoed, rarely pruned, and no efforts are made to destroy the caterpillars until half the leaves are stripped from the branches. If any of our readers have such bushes, the first thing to do is to set out new ones on new land. Let the old ones remain until the new ones come into bearing, and in the meantime give the old ones a dressing of manure, cultivate or fork and hoe the ground around them and keep down the weeds, afterwards cut out all dead branches, and all that are so far gone as to be hopeless. As a field crop, when you have access to a railroad station or near market, and can secure pickers, currants can be grown with considerable profit. But you must

plant on rich land, or make it rich with manure, and keep the soil all through the growing season well cultivated and free from weeds. Were we about to set out several acres of currants, we should set them out in rows not less than six feet apart, and three feet apart in the rows. This would give twenty-four hundred and twenty bushes per acre. Seven or eight feet apart would be better. The most popular red variety is the Cherry. This is owing to its large size and handsome appearance. But with us it is not as productive as the common Red Dutch, or Victoria. The Versailles is also a productive and good currant of large size. Size, however, is largely a question of rich land, good cultivation, and judicious pruning. — *American Agriculturist*.

THE NEW GRAPES.

Moore's Early.—This variety is a pure native. It ripened September 8th, about the same time as Massasoit, three days after the Hartford, fourteen days after the Champion, two or three days before Lady and Brighton, about two weeks before the Concord. The bunch is of medium size, moderately compact, berry large to very large, round; color, black, with a blue bloom; flesh, pulpy and of medium quality, better than Champion, but hardly equal to the Concord; vine, vigorous and hardy, but so far as we can see, only moderately productive. It is a handsome grape, and will sell well in market, although we think the Champion or Hartford to be more profitable.

Rochester.—Ellwanger and Barry's seedling is also a native, and ripened September 10th. The bunch is large, generally double shouldered, very compact, berry of medium size, dark purple; flesh melting, vinous, sweet, highly perfumed and rich. The vine is vigorous, hardy, with remarkably healthy

foliage and bears heavy crops in the worst of seasons, the fruit setting well under the most adverse circumstances. The fruit must be gathered and used as soon as it is ripe, for if allowed to become too ripe, it drops. Although this grape was introduced several years ago, it is rarely found, owing to the difficulty experienced in propagating it. It is referred to here on account of its excellence, either for the garden or vineyard, and we think it deserves to be disseminated, even if its propagation be slow and expensive. One cultivator in Canada goes so far as to say that the originators have not bestowed on it the praise to which it is justly entitled. On further trial over a wider extent of territory it may develop faults which have not been noticed here.

Lady.—A white seedling of the Concord. Bunch of medium size, moderately compact; flesh tender and pleasant, but not rich; vine vigorous, hardy and productive. It ripened September 10th, and is a valuable, early, white grape.

Eumelan.—Introduced several years ago by Dr. Grant, is almost too old a variety to be mentioned among these grapes, but its fine quality entitles it to consideration as an amateur's grape. Propagators cannot increase it profitably, hence it does not find its way into as many gardens as it should. Bunch of medium size, but variable, sometimes large, often small, somewhat loose, berry of medium size, black with a thick, blue bloom; flesh juicy, rich and superior quality. Vine moderately vigorous, hardy and yields well. It succeeds best when grafted on a strong grower, and is valuable only for the amateur who desires a fruit of the best quality. It ripened September 11th.

Brighton.—A cross of the Concord and Diana Hamburg, is another rather old sort which has done so well this year that it would seem unfair to over-

look it. In point of quality it is not excelled by any grape grown in the open air, but it must be gathered and eaten as soon as it is ripe, for when permitted to remain on the vines too long it loses its flavor. The berry and bunch are large and handsome, and the vine is vigorous and productive. In some situations the foliage mildews, sometimes only slightly, and again seriously; but it generally succeeds in favorable localities under careful culture. Recently it has been planted quite extensively for market, but care should be observed in selecting a suitable location. An amateur's collection which does not include the Brighton would certainly be incomplete. It ripened September 11th, ten days before the Concord and about a week after the Hartford.

Early Victor.—Raised by John Burr, is one of the newest grapes, and therefore not very widely distributed as yet. The bunch is rather small or of medium size, and compact; the berry is of medium size, round, black, covered with bloom; flesh slightly pulpy, very sweet and pleasant, but without any vinous spirit, which to some tastes is agreeable. It ripened September 13th, five days after Moore's Early, eight days after the Hartford and eighteen days after the Champion, and only ten days before the Concord. It was supposed to be earlier than Moore's Early, but it does not prove to be so this season, and it looks as if this sort would not occupy the place destined for it, although it is a good grape in its way.

Amber Queen.—Is a variety in which I have been considerably interested on account of its superior quality, but I doubt whether it is destined to become popular, owing to a serious defect which it has of not setting its fruit well. The bunch and berry are of medium size, color a bronzed purple, overspread with bloom; flesh tender, sprightly,

vinous and very rich. Vine vigorous and productive, with healthy foliage, but its leaves have a yellowish tint by which plants of this variety may be quickly and surely identified. It ripened September 11th.

Lindley.—One of Rogers' red varieties, has done so well in several localities as to be esteemed one of the best red grapes in cultivation. Like all hybrid grapes, it develops faults occasionally which are often of slight importance, but frequently serious under certain unfavorable circumstances. So far as I know, its greatest defect is that of failing to set a full crop regularly. One of its striking characteristics is its beautiful color, a bright, clear shade of red which attracts the eye to it at once, even when it is surrounded by larger and more showy grapes. Nor is it one liable to be disappointing after tasting it. Its good quality renders it a favorite immediately, and the pleasure it gives the palate is not easily forgotten. We regard it as one of the best red grapes in our vineyard, and from what we know of it, we should rank it among the standard sorts for the garden or vineyard. Strange to say, for some cause or another, this variety of the Rodgers has not been disseminated to the same extent as some others less worthy. It ripened September 15th, a week before the Concord.

Duchess.—One of the new white grapes, is said to have been produced by crossing a white Concord seedling with Delaware or Walter. The bunch is medium to large, long, shouldered, very compact, somewhat crowded; berries of medium size, but not uniform, some being quite small; form roundish; skin thick, generally dotted with small, black spots, about the size of a pin's head; color light green at first, becoming greenish yellow when ripe; fruit almost transparent; flesh tender, without pulp, juicy, sweet, crisp, rich, and

in quality it holds the highest place. Vine vigorous and productive, and the foliage that I have seen is healthy, though in some places it is said to mildew badly. Grown with care, the Duchess will, no doubt, prove to be a valuable white grape for the amateur, and, perhaps, in favorable localities may be cultivated successfully on a larger scale for market. It ripened September 18th, with Rebecca, five days before the Concord.—W. C. BARRY in the *Country Gentleman*.

IMPROVED STRAWBERRIES.

I thought that varieties which proved so superb on my own grounds would do as well elsewhere; but I had much to learn. There had been a rage for novelties, a disposition to think that the past would be utterly eclipsed. We should be slow in discarding old and well-tested varieties. Their apparent deterioration usually results from bad treatment and careless propagation. This tendency to part with the good qualities which once made a variety famous should be checked, and a process of higher development entered upon. I think it can be done in this simple way. I am referring to old standard kinds. For instance, take a bed of Wilson's seedling, select a plant that for some reason exhibits all the earliest and best Wilson characteristics. In every garden or field there are such plants that are head and shoulders above the others. Clear a space around such plants, and propagate from them. Repeat the process with the best children of these progenitors. We all know how well-known breeds in live stock and old varieties of vegetables are developed and improved by a careful and continued selection and propagation from the best. Apply this principle to the standard strawberries, and a new competitor must be great, indeed, to rival them. In the future, as in the

past, success in the development of the strawberry will lie in the direction of out native species. We should employ the most vigorous strains of our native stock in developing new varieties, choosing hardy mothers, or pistillate varieties, like the old "Champion." Instead of petting and stimulating new seedlings, I should put them in poor, thin soil, and then discard all except those which persist in thriving under unfavourable conditions. If on sandy or gravelly soil a new variety maintains vigour and productiveness of large, fine-flavoured fruit, we should have good reason to believe that it would succeed in varied soils and climates, when sent out into the rough-and-tumble of the world.—E. P. ROE, in *American Agriculturist*.

HEATING GREENHOUSES.

Heating greenhouses with steam has been on trial for several years, but the merits of the method have been variously estimated, so as to leave some doubt in the public mind whether it, or by the more common method of the use of hot water, was the better way. At the late meeting of the American Association of Nurserymen, Mr. Hunt, of Illinois, stated his preference for the employment of steam, though his own place is fitted out, "at a large expense," with hot water apparatus, and "it works well." In heating by steam, he says, experience has proved "that there is economy in construction, and a great economy in fuel." He gives facts and figures in two cases to support his position. In the first of these, where by some small changes nearly the same apparatus was employed for steam heating as had been previously used for hot water, the saving of fuel was thirty-three per cent. In the other, thirty-five per cent was saved in construction, and thirty-three per cent. in fuel.—*Vick's Magazine*.

CHERRY TREES vs. CHERRY BUSHES.

During a two weeks visit among the orchardists and nurserymen of the north half of Iowa and Illinois, and the south half of Wisconsin, dead or dying cherry trees have been an ever present subject for discussion, and the pile of letters on my return has a dozen or more queries as to the cause of this general destruction, and the possibility of securing a hardier set of varieties. While this is not the time to set cherry trees, it may be well to discuss a few general principles with our tens of thousands of dead and dying trees as object lessons before our minds.

A careful inspection reveals the fact that rupture of the cells of the cambium layer of the stems is the real cause of death. In former years we have often noted cases where whole cherry orchards lived and fruited two years after fatal injury of stem by means of a narrow bridge or two of live cells growing inward from the bark and outside of the dead wood of the stem. Mr. L. A. Williams, of Mills Co., Iowa, for instance, reported his large cherry orchards healthy and full of fruit. At the next meeting of the Western Iowa Horticultural Society, he reported his trees dead or dying. A section in our wood-collection of one of these stems shows plainly that the real injury of stems occurred two years previous to his first favorable report and that two annual deposits of wood had formed over a narrow layer of live cells. This narrow bridge connecting root and top sustained life, and perfected a crop as the last expiring effort of the tree. A careful inspection of dozens of stems, now, shows that the stems were nearly or quite ruined in the winter of 1882-3, and the work was finished by the last year's crop and our past test winter.

Again we notice that young trees standing alone of the Early Richmond,

Late Richmond and English Morello varieties are mainly in good condition and now making healthy growth, and we find young trees in thick clumps in still better condition. Without speculating as to leaf rust, toughening of the outer lacing of bark, etc., of older trees and stems, it is a proper time to consider the common plan of growing the cherry in Northeastern Europe, where soil and climate are much like ours. On the grounds of amateurs, peasants, and in large commercial cherry orchards, the hole is not filled up at planting, and the lower buds near the crown are encouraged to grow so that when leveled up the earth covers the bases of the limbs. By pinching the center shoots the outer whorl of branches is enabled to spread outward and upward, giving a large amount of bearing wood in bush form. As the plants attain size and age, the pruning is on the renewal plan; that is, the old stems are taken out and the young growth is encouraged to fill the vacant space. Possibly this plan may not please those who have a mania for high stems, yet it will win its way if carefully and systematically tried. Practically the same idea is involved in the cordon training of the cherry in Silesia, Poland and South Russia, on all well managed estates. The plants are started bush fashion, and the shoots are trained diagonally or horizontally on wire or pole trellis *towards the South*. The evident purpose is to screen the main branches, from the direct rays of the noonday sun, and to permit the removal of older branches, very much after our manner of growing the grape on wire trellises. Long experience has proved that regular crops and long lived plants can be secured by the low bush system, or the low cordon training, in sections where isolated trees with even low stems are short lived and uncertain in fruitage. Theory and practise seem to

favor the adoption of this Eastern plan of growing the cherry, even if we get hardier and better varieties.—PROF. J. L. BUDD, in *Prairie Farmer*.

THE LUTOOKA CHERRY.

The recent almost complete failure of all West Europe varieties of the cherry westward of Lake Michigan, and over large areas farther East and North, makes it specially desirable to experiment with the fine varieties of East Europe, where the conditions of soil and air are more like ours.

Of the varieties in our collection, the one known in Poland and Silesia as Lutooka seems specially promising. I first saw it loaded with fine fruit on the estates near Warsaw. Later I found it hardy and profitable on varied soils in North Silesia and in South Russia as far East as Kiev. The fruit is large, with small, oval pit pointed at both ends. The color is dark-red when ripe, but in the sun, a yellow expression is given by the yellow flesh showing through the transparent skin. Flesh firm, tender, juicy, mildly sub-acid. Dr. E. Jankowski, the eminent Polish pomologist, gives this variety two stars for dessert use, and a like number for the kitchen.

In leaf, bud, and habit of growth it does not seem to be closely related to any of the varieties described by Leroy, Lucas, Lauche, or other authorities of West Europe. On the other hand, it closely resembles in habit and fruit the Besarabian, and our numbers 23 and 25 imported from Orel in Central Russia, which varieties I was told by Dr. Fischer came originally from Central Asia. The leaves are peculiarly large, thick, and firm. The last two Summers have been peculiarly favorable for fungus growths upon the leaf of the cherry; yet this variety has escaped damage except a slight show of surface mildew on

some of the young leaves. As this does not penetrate the tissue, it seems to do no harm.

As to hardiness of tree, I can only say, as yet, that its young wood and stem were bright and perfect last Spring after the severe test Winter which killed our Richmonds of all ages. It has grown from the terminal points which such luxuriance that the shoots are assuming a pendent habit, which seems common to about all the varieties of the cherries of the East.—PROF. J. L. BUDD, in *Rural New Yorker*.

THE MARLBORO' RASPBERRY.

The Hon. M. P. Wilder, President of the American Pomological Society, writing to the *Rural New Yorker*, says: "I am anxious to see what you have to say about the Marlboro Raspberry. We gathered some berries on the 4th, and the bushes are now at their best. The great number of big suckers, four to six feet in height, detract from the size and earliness of the fruit. It is the earliest I have, and if the suckers had been treated as weeds, I have no doubt that the size, earliness and quantity of fruit would have been much increased. I have never seen a raspberry of such robust growth and productiveness of annual plants before, most of which must be destroyed if you wish for a crop of fruit. It is perfectly hardy, canes eight feet in length not injured at all. The Souchetii, or White Transparent, is now coming in; if you have it not, I should be glad to send you plants. I would not part with it."

APPLE ORCHARDS.

"The Apple is our staple fruit in Western New York, and after three years of failure of the crop the prices have been somewhat discouraging. It must be said, however, that a large portion of our Apple crop was not up

to the usual standard of excellence, very much not fit to go into market as first-class fruit. The main cause of this was that the trees were heavily loaded and poorly fed. We have good orcharists in Western New York, and many of them, but I must say, and I say it from actual observation, that a large number of our orchards are in a very low state of cultivation, neither creditable nor profitable to the owners.

"Without attempting any details of orchard culture, I would say that to make orchards productive and profitable, the fertility of the soil must be maintained by the use of suitable fertilizers, so that the trees will make a vigorous annual growth. Judicious pruning must be given, and insect enemies kept in subjection. Then when the fruits are grown and well grown, they must have proper care in gathering, assorting, packing and marketing. All these require skill and watchfulness at every step. Orcharding, even in our favored section, cannot be made profitable without thoroughness in every detail. The best method of preventing the ravages of the codlin moth is still a matter of anxious inquiry and experiment. The efficacy of Paris-green and other poisons, as well as the propriety of using them, are still open questions, and can only be answered satisfactorily by careful experiment. Thus far I think experience favors the use of Paris-green, when used with judgment and care."—*Address of P. BARRY, before the W. N. Y. Hort. Society, in Vick's Magazine.*

THE THRIP.—Mr. Cockburn said the thrip may be killed by spraying with a solution of one pound of sulphur and four of unslaked lime in a barrel of water. The thrip infests the Delaware more than any other grape; hence he would separate the Delaware from others. He suggested the running of all vines in one direction, so they may be laid down more easily for winter protection.—*Michigan Farmer.*

AN ODD BIT ABOUT TREES.

THE TREE PUZZLE, WITH ANSWERS APPENDED.

The "tree puzzle" that follows is one of the most ingenious trifles of the kind now current:

1. What's the social tree,
2. And the dancing tree,
3. And the tree that is nearest the sea?
4. The dameliest tree,
5. And the kissable tree,
6. And the tree where ships may be?
7. What's the tell tale tree,
8. And the traitor's tree,
9. And the tree that's the warmest clad?
10. The languishing tree,
11. The chronologist's tree,
12. And the tree that makes one sad?
13. What's the emulous tree,
14. The industrious tree,
15. And the tree that will never stand still?
16. The unhealthiest tree,
17. The Egyptian-plague tree,
18. And the tree neither up nor down hill?
19. The contemptible tree,
20. The most yielding tree,
21. And the tree that bears a curse?
22. The reddish brown tree,
23. The reddish blue tree,
24. And the tree like an Irish nurse?
25. What is the tree
That makes each townsman flee?
26. And what round itself doth twine?
27. What's the house-wife's tree,
28. And the fisherman's tree;
29. What by cockneys is turned into wine?
30. What's the tree that got up,
31. And the tree that was lousy,
32. And the tree that guides ships to go forth?
33. The tree that's immortal,
34. The trees that are not,
35. And the tree whose wood faces the north?
36. The tree in a bottle,
37. The tree in a fog,
38. And what each must become ere he's old?
39. The tree of the people,
40. The traveler's tree,
41. And the sad tree when school-masters hold?
42. What's the tree that has passed through the fiery
heat,
43. That half-given to doctors when ill?
44. The tree that we offer to friends when we meet,
45. And the tree we may use as a quill?
46. What's the tree that in death will beight you?
47. And the tree that your wants will supply?
48. And the tree that to travel invites you,
49. And the tree that forbids you to die?

ANSWERS.

- | | |
|------------|--------------------|
| 1. { Pear | 9. Fir |
| 2. Hop | 10. Pine |
| 3. Beech | 11. Date |
| 4. Spruce | 12. Weeping-willow |
| 5. { Tulip | 13. Ivy |
| 6. Yew | 14. Spindle-tree |
| 7. Bay | 15. Caper |
| 8. Peach | 16. Sycamore |
| 9. Judas | 17. Locust |
| | 18. Plane |

- | | |
|--------------------|------------------------|
| 19. Medlar | 34. Dyewoods |
| 20. { India-rubber | 35. Southernwood |
| 21. { Sago palm | 36. Cork |
| 22. { Fig | 37. { Smoke-tree |
| 23. { Damson | 38. Elder |
| 24. Chestnut | 39. Poplar |
| 25. Lilac | 40. Wayfaring-tree |
| 26. Honeysuckle | 41. Birch |
| 27. Citron | 42. Ash |
| 28. Woodbine | 43. Coffee |
| 29. Broom | 44. Palm |
| 30. Basswood | 45. Aspen |
| 31. Vine | 46. Deadly night-shade |
| 32. Rose | 47. Breadfruit |
| 33. { Satinwood | 48. Orange |
| 34. { Aloe | 49. Olive |
| 35. (Ilchm | |
| 36. Arbor-vita | |

—*Philadelphia Times*.

THE RUSSIAN APRICOT. — Professor Budd, of the Iowa Agricultural College writes to the Prairie Farmer that it runs into many varieties, as grown from seed by the Mennonites of Nebraska. Some of them have stood the past winter fairly well; others have not. We have on our grounds varieties from Central Russia which seem perfectly hardy.

ASPARAGUS TENUISSIMUS. — Nothing can exceed the feathery grace of foliage of this most beautiful of all vines for pot culture, and it grows up a string nearly as fast as Smilax. It keeps fresh so long after cutting that it is particularly desirable as a green for bouquet making. One of the most handsome and unique bridal bouquets we ever saw was composed of Niphetos Rose-buds just shadowed over with a filmy veil of the downy foliage of *Asparagus tenuissimus*. This plant grows so readily from cuttings that it will soon become plentiful.—*Am. Garden*.

THE JAMES VICK STRAWBERRY.—We have given the James Vick strawberry another trial, this time under high cultivation and under the single-plant system. Yet, the yield was anything but satisfactory. The plants were very large and thrifty, the fruit stalks numerous and well loaded, but the berries hardly medium in size, with only few large, and many small and imperfect ones. The berry is firm and solid, good for canning, which is about all that I can say in its favor. Under the matted-row system, the James Vick has proved of no account everywhere I met with it.—*Farm and Garden*.



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PRUNUS PESSARDI.

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[No. 11.]

THE PURPLE-LEAVED PLUM.

After all there is something very attractive in the foliage of our purple-leaved trees and shrubs when they are so planted as to bring it in contrast with the green leaves of other trees, forming a back ground upon which the rich coloring is projected and with which it is contrasted. We have a few very fine purple foliaged plants that are well worthy of attention. The Purple-leaved Beech has been in cultivation for many years, but it is so difficult to transplant a tree of any size and have it thrive well that few specimens of it are to be found. Were our planters willing to abide the day of small things, and be content to plant it when its size is so diminutive as to make it seem insignificant, it would more frequently survive and in a few years become a beautiful ornament. A very fine specimen of this tree we saw some years ago in the grounds of Senator Macpherson, at Yorkville; and, if no calamity has befallen it, by this time it must be a prominent and beautiful feature of the park.

The Purple-leaved Birch is of more recent introduction, and well worthy of the attention of ornamental planters. Less difficult to transplant than the

beech, it is much more likely to succeed with ordinary care. In habit it is as vigorous as any of its fellows, and its young shoots are brilliant in their coloring throughout the season of growth. Even the bark of the branches and twigs is of a dark purple hue. In our grounds the trees have been perfectly hardy, not the slightest injury resulting from summer's heat or winter's cold; indeed it would seem to be able to stand by the side of our native birches in our most northern latitudes.

In those parts of the land where the peach tree can be successfully grown, the Blood-leaved Peach can be planted as confidently as any other peach tree. It is said to have been found growing in Kentucky, on the battlefield of Fort Donelson. Were this the age of mythology we should, no doubt, be told that the blood of some hero who fell on that aceldama had nurtured the young sapling, and so dyed its natural juices that the very leaves are red. If this tree be well pruned back every spring it will form a handsome compact head, and the young growth will be of a deep blood color throughout the summer.

Besides these there is a purple-leaved Oak, whose dark purple leaves retain

their peculiar color all through the season. It is a variety of the Royal Oak of England.

Also a variety of the Norway Maple known as Schwedler's, whose young shoots are of a bright, almost crimson color. The foliage becomes darker with age, until in the autumn it assumes a purplish green.

But it was our intention to bring to the notice of planters a tree of yet more recent introduction, known as the Purple-leaved Plum. Our colored plate is a very good representation of its foliage. We imported a few trees of it a short time ago from Europe, and have been much pleased with its behavior. It has been perfectly at home in our climate, and made a good healthy growth. Although it has flowered twice, no fruit was formed. We learn from the *Rural New-Yorker* that it has fruited in the grounds of P. J. Berckmans, of Georgia; that the fruit is of the myrobolan order, of the color of the Acme tomato, firm in flesh, moderately acid, but not of high flavor. In the early spring the leaves are of a beautiful rosy purple; these change, as the season advances, to a deep purple, and afterward to a greenish purple, and finally to a bronzy green; but the young shoots during the season of growth are of the rosy purple of early spring, thus giving to the tree a most pleasing variety of coloring during all the summer months.

HARDY LILIES.—C. E. K., of Little Rock, Arkansas, asks about Lilies suited to the open garden, and as I have had large experience with all the various species of the Lily family, I answer, that *L. Thunbergianum*, in its many varieties, from chocolate to lemon in color, will be found the hardiest and surest to bloom of all Lilies, and they are very beautiful, too. They are as hardy and as sure to bloom as Tulips.—G. B. W., in *Pick's Magazine*.

THE CANADIAN HORTICULTURIST.

PROSPECTUS FOR 1886.

This magazine has been for the past eight years, and is now, the only publication devoted to horticulture in Canada, having special reference to the varieties of fruits, flowers, trees, shrubs, and vegetables, and modes of cultivation best suited to our climate. It is intended to make it during the year 1886 more valuable, if possible, and attractive than it has ever been. Canadian contributors, residing in various parts of our Province, will give the results of their own practice and experience, which will be invaluable to others in similar circumstances. The subscription price is only one dollar a year, for which the subscriber will receive not only the *Canadian Horticulturist*, which is issued regularly on the first of every month, but also the Annual Report of the Fruit Growers' Association of Ontario for 1885, as soon as printed, containing the discussions at the meetings held during the year, accurately reported by a competent stenographer. In addition each subscriber will receive in the spring of 1886, by mail, post-paid, whichever he may choose of the following articles, namely, either (1) three plants of the Ontario Strawberry, or (2) a yearling tree of the Russian Yellow Transparent Apple, or (3) a plant of the Lucretia Dewberry, or (4) a yearling vine of the Early Victor Grape, or (5) two plants of the Marlboro' Raspberry, or (6) a package containing three varieties of flower seeds, viz., *Gypsophyla*

paniculata, Aquilegia cerulea, and Delphinium, mixed colors.

Subscriptions may be sent at any time to the Editor, D. W. Beadle, St. Catharines, Ont.

TO OUR READERS.

The Canadian Horticulturist is not published with the expectation or desire of pecuniary profit. Every dollar received from subscribers is expended in procuring and publishing information that will be both interesting and valuable to its readers. If you have found our monthly interesting and valuable to you during the past year, will you not please to help us increase its attractiveness and usefulness by obtaining a few new subscribers. It costs but a little more to publish an edition of five or six thousand, than of only two thousand. The increased funds that would be at our disposal if the subscription list were doubled, would enable us to greatly improve the Magazine. Will you not help us to make our *Canadian Horticulturist* the best and most attractive horticultural monthly.

As some acknowledgment of your kindness in obtaining new subscribers we will send to you, prepaid, on the receipt of five dollars and the address of five new subscribers, any one of the following collections of bulbs or plants. Collection No. 1, one Chionodoxa lucilla, one Lilium longiflorum, two Fritillaria meleagris, two Spanish Iris, and two Narcissus Poeticus; No. 2, five tulips, two Chinese Peonias, one Spotted Calla, one Tiger Lily; No. 3, a Collection of five different Lilies; No. 4, a Collection of five different sorts of Iris; No. 5, two double and two single Hyacinths, and three double and three single Narcissus; No. 6, Five herbaceous perennials, Fraxinella, Dianthus, Japan Anemone, Japan Spirea, and Clematis erecta; No. 7, Three hardy flowering shrubs, Hydran-

gea paniculata, Spirea Van Houtte and Purple Fringe; No. 8, a collection of twelve different sorts of flower seeds; No. 9, four hardy Roses; No. 10, Four Tea Roses; No. 11, Three Polyantha or Miniature Roses; No. 12 Four climbing Roses.

For ten dollars and ten new subscribers we will send, prepaid, any two of the above collections you may designate; or if preferred, we will send you one strong yearling tree of the Russian Vladimir Cherry, grown from trees imported by the Fruit Growers' Association direct from Russia.

If you prefer books we will send you, prepaid, on receipt of three dollars and three new subscribers, *Every Woman her own flower gardener*, 148 pages, bound in cloth.

For five dollars and five new subscribers, *Window Gardening*, 300 pages, illustrated with 126 engravings.

For twelve dollars and twelve new subscribers, *Saunders Insects Injurious to Fruits*, 436 pages, 440 engravings, bound in cloth.

For fifteen new subscribers and fifteen dollars the *Floral Kingdom*, a magnificent art book, splendidly bound, 450 pages, 200 illustrations.

Our prospectus for 1886 will explain fully what each subscriber is entitled to receive during the year.

New subscribers will receive the *Canadian Horticulturist* from the time the subscription is received until the end of the year 1886.

TO OUR NEW SUBSCRIBERS.

If you desire to have the report of the Fruit Growers' Association for 1884 and the *Canadian Horticulturist* complete from the first of January 1885 they will be sent to you on receipt of sixty cents. Thus for \$1. 60 you will receive the Reports of 1884 and 1885 and Volumes VIII and IX of the *Canadian Horticulturist*, complete.

THE SAUNDERS PLUM.

We received about the first of September last from Messrs. Stone and Wellington a sample of this plum, which the Fruit Growers' Association of Ontario has named the "*Saunders*" in honor of their much esteemed President. The samples received were of medium size, yellow in color, and in flavor strongly suggestive of the Imperial Gage, and when we say this we cannot say more in favor of its quality, for the Imperial Gage is considered to rank as "*best*."

We are informed that the tree is exceedingly hardy and has never been affected with the black-knot, although other trees surrounding the Saunders are literally covered with black-knots. It is a heavy annual bearer, always yielding fruit even when other varieties in the neighborhood fail. The tree is a chance seedling found growing in the eastern part of Ontario.

CANADA BALDWIN.

The following description of this hardy variety is kindly furnished by Mr. George Leslie, jun : Fruit medium size, roundish oblong, slightly larger on one side than on the other, handsome, stalk thin, 1 to 1 $\frac{1}{4}$ inch long, set in a deep open basin, eye closed in a rather shallow open corrugated depression. Skin, thick, smooth, yellow, deepening on the sunny side into a deep dark red, striped and blotched with carmine varying to dark crimson, with distinct purplish grey dots, the most of the stem end being clouded with a purplish grey bloom. Flesh, white tinged with pink, sometimes slightly striped with pink, breaking, not very juicy, pleasant, mild subacid flavor, verging on sweetness, somewhat resembling the Fameuse. Tree, hardy, moderate grower, productive.

TO OUR SUBSCRIBERS.

Will you have the kindness to renew your subscriptions before the end of the year so that we may know how many copies will be required. It is a waste of funds to print more than will supply our readers, yet even those who do not renew until after the new year want to get the whole year complete. It may be impossible to supply the whole volume to those whose subscriptions are not received until after the January number goes to press, which is about the 15th of December.

QUESTION DRAWER.

REMOVING GRAPE LEAVES.

DEAR SIR,—Would you kindly let me know if it is proper to remove the leaves, or I should say foliage, from over the grapes to hasten their growth and ripening. I hold that it is not proper to do so, and I never do it with my own.

R. H. S.

Penetanguishene.

REPLY.—The leaves are the organs in which the sap is elaborated so that it will nourish the plant and continue its growth, which involves the fruit as well. They also are the organs in which the process of assimilation takes place; carbon, oxygen, hydrogen and nitrogen being taken from the air and converted into organic compounds. How can these processes go on if the leaves are taken away! It is not the action of the sun or of the air directly upon the fruit of the vine that causes it to grow and ripen. Indeed the grapes are much finer every way, in color and in flavor, when ripened under the shadow of the foliage than when exposed directly to the sun's rays. But

the leaves require to be exposed freely to the sun and air in order that these processes of elaboration and assimilation may take place. Hence it follows that the vine may be allowed to grow in such a tangled mass of leaves that they are not fully exposed to these agencies without which they cannot perform these functions ; for this reason judicious pruning is necessary, and the taking away of superfluous shoots, so that every leaf may have its full measure of light and air, and so be able to perform its work of developing and ripening the clusters which hang beneath them in the shade.

BUDDING.

SIR,—Would you kindly inform us through the *Horticulturist* how to bud apple trees. After removing the wood of the bud should the bud be taken out also, when should the tying be removed, and will the bud start to grow the same season it is put in?

EDWARD BARTLETT.

REPLY.—Select a smooth place in the stock and with a sharp, thin-bladed knife make first a horizontal cut, just deep enough to cut through the bark, and then from the centre of this make a perpendicular cut of the same depth, the two cuts forming a T. After having made these incisions in the bark, take your scion, or stick of buds, in your left hand and cut out one of the buds together with a strip of the bark and a very thin slice of the wood, beginning to cut about half an inch from the bud, and bringing the knife out about the same distance above it. It is desirable that the slice of wood

should be exceedingly thin. Now carefully raise the bark at the corners of your cut, and holding the bud by the leaf stalk insert the lower end under the bark and slide it down the perpendicular slit until the upper end of the bark of the bud coincides with the cross or horizontal cut of the T. If a little of the bark of the bud extends above the horizontal cut it should be cut off with the knife so as to form a square shoulder exactly fitting to the bark of the stock above. The bud should be kept in place by winding around the stock some bass matting, or woollen or cotton yarn, taking care to bind the bark of the stock securely over the bud, leaving only the bud with its leaf stalk projecting. After the bud has become united to the stock and the ligature begins to bind too tightly the string should be taken off. I do not remove the wood from the bud. The bud will not usually start to grow until the next spring. You should procure five new subscribers to the *Canadian Horticulturist* and send their names and five dollars to the Editor and receive in return for your trouble a copy of the *Canadian Fruit Flower and Kitchen Gardener*, in which you will find the methods of grafting and budding not only described but fully illustrated with engravings, besides much other very valuable and interesting matter.

EUROPEAN APPLE ORCHARDS.

I want to find out something about the prospective foreign demand for apples, about the areas in the old world devoted to orchards and to what extent

apple orchards are there being planted, and what parts of Europe are most given to apple culture, etc., etc. If you have any items of interest in this direction, perhaps you would kindly give us the benefit in the *Horticulturist*.

L. W.

Will some of our readers who are familiar with the fruit markets of Europe, and especially if having a knowledge of the area of orcharding in Great Britain and on the continent, and whether that area is being increased or not, please reply to this interesting inquiry.—ED. CAN. HORT.

BLACK CURRANTS.

What is the proper soil for black currants, and proper mode of cultivation. Would they do well on black muck soil?

J. C. CUMMER.

REPLY.—While thriving well in almost every soil, they will produce the best results in a well drained clayey loam, which is deep and rich, and if well supplied with manure will respond accordingly. We have not had any experience with them in black muck, but if well drained and liberally dressed with hardwood ashes, we should expect good results. The best fruit of next year's crop will be borne on the young wood of this season's growth, therefore in pruning preserve the young wood, and prune out old wood to secure a sufficiency of young bearing wood.

NUT PLANTING.

(1.) Is it best to plant walnuts in the fall, or to dry them and plant in the spring.

(2.) If planted in the fall do they

require to be taken up in the following spring and transplanted.

Yours, etc.,

Simcoe.

C. W. CULVER.

REPLY.—(1.) It is best to plant the nuts as soon as they fall from the tree. If not convenient to plant them where you wish them to grow, place them on the ground and cover them with four inches of soil. Early in the spring, before they begin to grow, plant them where you wish them to remain.

(2.) If you can plant them in the fall where you wish them to grow, it is better never to disturb them, but let them grow on until they attain their full size.

WHAT THE PEOPLE SAY.

FRUIT IN COUNTY OF GREY.

I have a good crop of apples and grapes and the Flemish Beauty pear tree was very heavily laden with fruit this season, but apples in general are scarce.

WILLIAM BROWN.

Annan, Co. Grey.

HARDY CATALPA.

DEAR SIR,—As you like to hear of the success of the plants sent out by the Association I beg to inform you that the "Hardy Catalpa" I got is growing well and I have great expectations that it will be a handsome tree in a very few years. It has made eighteen inches of strong wood, the leaf is six and a half inches wide and eight and a half inches long, and including the leaf stalk thirteen inches.

Yours,

M. ARMSTRONG.

Hamilton, Sept. 8. 1885.

FRUIT NEAR AULTSVILLE, STORMONT.

Apples are not so much spotted as last year, but still badly affected, especially the St. Lawrence and Fameuse, although I gathered twenty four barrels of Fameuse yesterday from four trees with hardly a spot. I could not give like experience for many years back. Yet at least half of my Fameuse trees are bearing fruit that is almost worthless. The east side of the orchard is always the worse. Trees that are much shaded are not always most spotted. The fruit on young trees is as badly spotted as on old. Trees in an orchard seeded down for ten years are this year more free from spot than those in the garden. We have had frosts, 29th September, but not enough to hurt the grapes, which are doing well. Worden was ripe a week ago, and Moore's Early, both fine grapes, the former especially. I pulled some Delaware, Wilder, Massasoit and Brighton to-day fairly ripe. Massasoit, although quite eatable, shews a good many uncolored berries.

JOHN CROIL.

THE CLEMATIS.

(For the *Horticulturist*.)

In the County of Lambton this beautiful and thrifty climber and elegant flowering plant, in some of its improved and modern forms, is likely to be a grand success. It is true we are only just getting our interest in the Clematis in its improved form properly aroused, but yet several have been induced to try their luck by planting a root or two in our climate and surroundings, and when this has been properly done the satisfaction even for the first season has generally been very great. The consequence is that the interest in it is extending among our people. The Clematis seems to have so many fine qualities to recommend it that it can-

not fail of being a great favorite amongst us when thoroughly introduced. In the first place by means of slight winter protection the roots are known to be perennial, and although the tops should die down to the ground yet the next season's growth produces such a remarkable profusion of vine, foliage and beautiful flowers that it is quite astonishing, and will never fail to draw the attention of the most casual observers to so gorgeous a spectacle. These vines can readily be made to climb over and cover an old fence, or a trellis made for the purpose, and in either case the result will be attractive and charming, or they may be made to fill artificially prepared lattice work or wire work about the home verandah and produce the finest effects imaginable in the decoration of the home. The flowering season, commencing as it does in June or July, will last until October, thus filled by a succession of bloom during the whole season. In my travel this summer I came to the home of a lady who had been induced by some tree agent to purchase a root of an improved Clematis the year before at a great price. The lady had carefully planted it just at the west end of her beautiful residence in Watford where it grew finely and made her home still more beautiful by its abundant foliage and mass of gorgeous flowers. About the first object of interest on her lawn that she had to show me with an honorable pride was this Clematis, then in full bloom, planted by the side of her house only the summer before. The growth was very surprising. It was trained on a nice, neat trellis about eight feet high and five or six feet wide at the top, and the whole space was almost covered by the most gorgeous mass of distinctive blue bloom. It was most certainly a very attractive object to her family and her visitors, and not only abundantly repaid her for

her expense and care, but greatly helped to adorn and beautify the home where it stood.

MY EARNEST ATTENTION

has of late been very strongly drawn to the study of the Clematis as a decorative lawn plant likely to be very much used in this country as it has several points of great merit. Last season I was induced to select and purchase and plant some twenty or twenty-five of the best sorts of improved Clematis I could find described. Some of these have done remarkably well this season, have grown finely and have shown some of their most attractive and finest blooms. Although this result has been very satisfactory to me, yet I am hoping for far better results next year when their roots have become established in their new homes and strengthened for the production of more and better blooms. The Clematis likes a high, dry and very warm soil, or a good, strong, well-drained sandy loam seems to suit them even better, and for the best results in bloom it must be made very rich with strong fertilizers and good mulching. A slight protection in winter will be found very beneficial and help very much the succeeding season's growth and quantity and quality of bloom. To do this take down the vines from the trellis and if old wood must be saved prune nicely late in the season and cover the whole with a moderately heavy covering of leaves or light litter. Some varieties produce flowers or flowering shoots on their old wood and others produce new from the root, but in either case the results will be very satisfactory if generous treatment is given. I have noticed the Clematis is never inquired for or brought out at our floral exhibitions, although they may be procured in their season. Why this is so I cannot explain.

THE VARIETIES

I secured this season were the following: Belisarius, Fair Rosamond, Fortunei, Helena, Henryii, J. G. Veitch, Lanuginosa candida, Lawsoniana, Stella, Madam Grange, Gem, Randalierii, Flammula, Tom Moore, Tunbridgensis flammula, Standishii, Crispa, Jackmanii, Coccinea, Duchess of Edinburgh, Verchafeltii, Virgineana, Vita Alba, etc. To these I intend adding others as they may be brought to my notice. Of these, Viticella, Venosa, Henryii and Belisarius have bloomed very finely this season, and promise to be something very attracting indeed by their magnificent blooms. I am hoping to be able at some future time to report to you far more fully of their behaviour, and the result of my experiments with this interesting and promising class of plants for ornamental purposes.

Yours very truly,

B. GOTT.

Arkona Nurseries, Oct. 5th, 1885.

WINTER PROTECTION OF TREES AND PLANTS.

BY A. M. SMITH.

The loss of fruit trees and plants by freezing of the roots during the last and two or three previous winters in the Niagara district and other places which had been always considered to be the most favored sections for fruit growing in Ontario, has become something alarming, and fruit growers are beginning to ask, "What shall we do to protect our trees and vines?" In many places large vineyards of young vines have been almost totally destroyed and older ones have been badly injured, and peach, pear and cherry trees have also suffered to a great extent. The want of proper covering has allowed the frost to penetrate beyond its usual depth and the want of sufficient moisture in the soil (the winters having set

in when the ground was very dry) to draw the frost from the roots has been the cause of the trouble, and the question is how shall we retain nature's covering or what shall we use as a substitute to protect the roots of the plants. Everyone knows that where banks of snow lay through the winter that wheat, grass, and all kinds of vegetation come out fresh and green in the spring. The writer planted a vineyard three years ago last spring on the east side of a Norway spruce hedge, which held the snow for the space of two rows; the following winter killed every vine beyond the extension of the snow drifts while those under the drifts came out all right. A few days ago I visited a vineyard in Stamford which was planted two years ago. In the highest and most exposed part there had been planted a row of black currant bushes between each row of vines which had retained the snow in winter around their roots. These vines were thrifty and some of them bearing fruit, while rows adjoining, which had received equally as good care and cultivation, but had no currants between, had been wholly or partly killed the past winter. This has suggested an idea to a neighbor of mine, who has planted a drill of corn between each row of his young plants or vines which will be about three feet high when the frost comes, which he intends to let stand to hold the snow. His strawberry plants he has treated in a similar way by sowing peas along each side of the rows allowing them to fall over as a protection. I see that the Niagara Grape Co. have recommended to planters of their vineyards in Canada to sow rye early in the season so it will get a growth to protect the roots, and the plowing of it in in the spring will help to enrich the ground. But to those who have not taken any of these precautions I would recommend mulching heavily with

coarse manure-straw, corn stalks, or anything that will keep out the frost or hold the snow from blowing away. If there is danger from mice place a little Rough on Rats or poisoned wheat around the fields under old boards or rubbish where they burrow, and next spring don't forget to plant wind-breaks around your orchards and vineyards. I am satisfied that the hedge referred to on my own place has more than paid for the cost of it in protecting two rows of grape vines for two years.

St. Catharines, Oct. 10th, 1885.

EXPERIENCE WITH APPLE TREES IN THE COUNTY OF GREY.

In the spring of 1883 I planted some trees which I expected to be hardy, but I have been disappointed as the following will show: Out of three Wealthy apple trees one is almost dead and another is badly injured. My premium Wealthy is also badly hurt. Out of two Pewankees one is dead and the other is badly injured, and one Wolf River killed to the ground. This damage was all done last winter, these trees being almost untouched the previous winter. The injury was almost entirely on the trunk, the bark being killed in patches, sometimes quite girdling the tree. Five Wallbridge were all badly killed back in the young wood both winters, but not hurt in trunk; three Mann the same, but one of them killed to the snow line last winter. Two Haas, killed back in the young wood, but not quite so bad last winter as the one previous. One Whitney number 20, unhurt. I have nine trees of the Duchess of Oldenburgh, eight years planted, which are quite hardy, also some which I think are Red Astrachan and some Faneuse of the same age that are pretty hardy. My orchard is high and exposed on all

sides, with a hard pan subsoil and undrained.

R. SCOTT.

Hopeville.

Such notes of experience are among the most valuable contributions we receive, and are always welcome.—

EDITOR.

CURRENTS.

Currents are not receiving the attention they demand; years ago everybody had their row of currant bushes, it was no trouble to grow them, just plant them out and with a very little attention all the currents could be grown that were wanted. When the currant worm came along and destroyed most of the bushes nearly everybody was discouraged, and gave up in despair, but they are so easily gotten rid of by the use of Hellebore with one application (if put on in time), that there is no longer any excuse for not growing them. Among the most profitable sorts I have grown, I would name Ruby Castle and Victoria. Some say they are the same, but I think there is some difference in favor of Ruby Castle. They both hold their foliage very late in the season, which protects the fruit so that it can be left on the bushes for a month after they are ripe. They improve in quality and will bring a much better price in market. The Cherry currant is not as productive as the above, and does not hold its foliage so well, and but little larger when grown side by side. The cherry will give larger berries while the bushes are young, but do not continue to do so in old plantations.

Fay's Prolific is said to be far ahead of all others, but it has not been tested sufficiently in Canada to know that it will be what has been claimed for it.

White Grape is a splendid variety (I have just been out to-day, Sept. 30th,

eating some from the bushes, and find they are first-class in quality) with less acid than the red sorts. The White Grape is one of the best for home use, and in some markets they will bring one cent per quart more than the red. I think there are too many people that go into small fruit growing who confine themselves to perhaps strawberries and raspberries, or some other two or three kinds, while if they would grow all of the small fruits (a few standard varieties of each sort) they would have less failures, and the work of growing and marketing can be done to much better advantage.

Unless we can find some black currant that is more productive and reliable than Black Naples or Lee's Prolific, we cannot plant them with the hope of getting a paying crop more than once in three years; true, there are some localities where they are quite regular and heavy bearers.

Perhaps in no other small fruit is there so much need of improvement as in the black currant. It is to be hoped that some of the many new seedlings of Wm. Saunders, of London, may prove to be much more valuable than anything we now have. P. C. Dempsey, of Trenton, is also testing a number of his own new seedlings, some of which are very promising.

W. W. HILBORN.

Arkona, Sept. 30, 1885.

JEWELL STRAWBERRY.

J. S. Woodard, of the *Rural New Yorker*, writes us as follows: "I have examined the Jewell on all kinds of soils, and we have fruited it two years, and I do not hesitate to say that it is the best berry, all things considered, that we have. I believe that it will be more universally popular than the Wilson, and that is saying a good deal."

CAN THE APPLE BE RAISED WITH PROFIT?

The important question which our northern fruit growers have now to decide is in regard to the Apple. Can it be raised with profit? We cannot, at present, examine the question in detail, but it may be said that the planting of Apple orchards has greatly fallen off for a few years past; many have been neglected and left a prey to insects, mainly for the reason, perhaps, that some seasons of unfortunate weather have prevailed for awhile, and left us without a crop until last year; and for the same cause some have even cut down their orchards. This course is wrong, and a few years more will make it plain. We shall always need the Apple in abundance; no other fruit can wholly take its place. With the present low rate of orchard planting the demand for good Apples will soon exceed the supply, no matter what other fruits are in the market.—*Vick's Magazine*.

THE TRIUMPH GOOSEBERRY.

A new Gooseberry is now being introduced by Mr. Geo. Achelis under the above name. It is said to be remarkable for the size of the berries, they being in actual measurement seven eighths of an inch in diameter, which would make them about two and a half inches in circumference. It is an American seedling, but of what parentage we are not informed. The introducer claims for it that during the dozen years in which it has borne fruit it has not shewn the slightest sign of mildew; also that it is exceedingly productive, one branch a foot long having on it sixty five berries which were, on an average, one inch in diameter.

We shall eventually get gooseberries that will thrive in our peculiar climate which will rival in size and excel in flavour the famous gooseberries of Eng-

land; for our more sunny skies impart to all fruits a richer coloring, and to most of them a higher flavor than they can acquire in the more moist atmosphere and under the more cloudy skies of the British Isles. Our Canadian hybridizers are at work upon this fruit, and we believe that Mr. Dempsey has already raised some seedlings of great promise. They have not been brought to public notice, for it is his practice to test thoroughly all his productions and ascertain by years of trial whether they are worthy of attention before he speaks of them in public. Should they prove to be adapted to our climate, to be of fine flavor, good size and productive, the public will hear more of them; if not, they will be consigned to the land of forgetfulness.

SUMMER PRUNING OF GRAPE VINES.

Professor Budd writes to the *Prairie Farmer* on this subject as follows:—In our hot dry air of the West very little trimming is needed in summer, if the vines are properly pruned when laid down in November. In this connection I will say that vines left on the trellis have been generally killed at the West the past winter. We find it best in laying down to cover the tops with earth when bent over to the ground, and to throw a small mound of earth over the crowns. The bow, formed in bending over the canes, is left uncovered. The object in view is merely to lessen evaporation from the canes when the roots are locked in frost. Again, tens of thousands of recently planted vines have been root killed. In all cases where the vines have been planted two feet in depth—filling the holes gradually as the canes made growth, they have come through in perfect condition. On dry porous soils our people must learn to plant deeply if they would be successful.

PEAR BLIGHT.

N. Y. AGRICULTURAL EXPERIMENT STATION,
Geneva, N. Y., Aug. 24, 1885.

The progress of the work at the Station on pear blight this season has been substantial and practical. The work last year established the infectious nature of the disease. The large number of artificial inoculations made for this purpose were quite free from any danger of accidental contamination, as there was no spontaneous occurrence of the disorder in the orchard or the immediate vicinity. This year the disease has shown itself in force, over one-third of the trees in the orchard being attacked, as well as the trees in the adjoining grounds, and the nursery stock, hawthorn hedges, etc., of the vicinity. This opportune visitation has permitted a very thorough study of the progress of the disease in its virulent form.

Last year's work, as well as that of Professor Burrill in Illinois some time since, indicated that the disease does not as a rule spread from limb to limb, and we have now discovered the reason why it does not, and what is more important, have found out the manner and time of its real attack upon the tree—when it first finds entrance into the tissues and begins the work of destruction.

While taking a stroll the last day of June a solitary hawthorn shrub was met, with the larger part of the leaves brown and dead. Its odd appearance attracted attention, and a close inspection indicated that it was suffering from blight, a conclusion fully corroborated by a subsequent microscopic examination. In all cases the blighting had evidently begun at the ends of the branches, and largely at the ends of the short spurs along the sides of the limbs. These spurs usually terminate in one or more clusters of flowers in the hawthorn, which at that time had long

passed, and on the uninjured parts had matured into fruit fully two-thirds grown. On the diseased spurs, however, the dead flowers had not perceptibly developed beyond the condition at flowering. Here was surely a significant fact. The blight must have attacked these parts not later than the period of flowering, which this year was from the middle to the twentieth of May. The germs found a favorable place of entrance through the moist surface inside the flower, and from that point passed down the flower stalk into the branch, and so on, killing the tissues as it progressed. In cases where it did not find entrance in this way it had attacked those shoots of the present season which were making the most vigorous growth, as the length of the internodes and the number of partially grown leaves on the dying portion readily showed. Subsequent inspection of several untrimmed hawthorn hedges near the Station confirmed all that has been said above, both in regard to the behavior and extent of the disease.

The orchard was at once carefully gone over, and evidences of blight were found in no less than one-third of the trees. The following varieties were among the blighted ones: Bartlett, Buffum, Doyenné Boussock, Flemish Beauty, Mt. Vernon, Seckel, Sheldon and White Doyenné. In fact the blight seemed no respecter of varieties so far as our assortment was concerned, for all kinds on one side of the orchard were touched, while almost every tree on the opposite side remained free. It was found that in many instances the entry had been made through the flowers as in the hawthorn, but more often through the growing tip of a branch. An armful of blighted branches from Kieffer pears, which are not found in our orchard, were brought me on July 24 as badly blighted as one often sees.

The blighted branches were removed with pruning shears on July 1, by a day laborer who was none too keen eyed. Ten days afterward the orchard seemed far more blighted than at first, and in many instances it had struck at the bodies of the larger limbs, and in one instance at the trunk below the limbs.

There was now a marked difference in the amount of blight showing on the several varieties. The Bartlett led them all, some of the larger trees being so much affected that when the diseased branches were removed there was but little of the top left.

At first this was puzzling. A careful study of the case, however, furnished a solution. Although all had probably taken the blight about equally, yet it had spread through the tissues at very different rates in the different varieties. The Bartlett showed itself the most susceptible. The apparently rapid blighting of large limbs was readily traced to the incursions of the disease through the short spurs near their bases. In the less susceptible varieties the disease had not travelled the whole length of the spur at the time of the first pruning, and was therefore all removed. In the most susceptible kinds it had gone the length of the spur and already entered the large limb when the spur was cut away. Here it did not take long to girdle the limb, prevent the passage of sap, and thus practically kill it. In the single instance where blight occurred on the trunk of a tree below the branches, it was perfectly evident that it had entered through a vigorous young shoot that had started out at that point this spring. The failure to cut it away before the blight reached the trunk cost us the entire tree.

In addition to the out-of-door observations, a very extended course of experiments in the house have been carried

on. It is only necessary to refer to these in the present connection in order to mention the artificial cultivation of the germs of the blight. These have been grown in sterilized infusions of corn meal, hay, barn-yard manure, green fruits, starch, etc. The important point is that they will live and thrive outside the tree in dead organic substances.

These are the facts. They explain the phenomena of pear blight in this way. The disease is due to living germs. These germs can live and multiply indefinitely in any damp spot where there is decomposing vegetable matter. From such places they are raised into the air when dry, or carried up by moisture. From the air they lodge upon the trees, and when the conditions are favorable pass into the tissues and cause the blight. The conditions referred to are in general (1) very tender tissues, such as are found within the flowers and at the ends of expanding shoots in spring, and (2) a moist atmosphere. No varieties are entirely blight proof, but the disease spreads so slowly in some that they receive little injury, especially when not making too rapid growth. The reason why the blight, when seen in July and later, does not pass directly from one limb to another, or from one tree to another, is because in the first place the germs cannot escape, being confined by the bark, or else escape in a viscid exudation which holds them firmly together, and in the second place there are very few places on the tree at this time of the year where the surface tissues are sufficiently tender for them to find an entrance.

Does not all this suggest some thoughts regarding preventives and remedies? Do not force the tree into too rapid growth by heavy fertilizing or otherwise. Place no confidence in sulphur, lime, or washes and applica-

tions of any sort. Promptly remove every trace of the disease a foot or more below the lowest spot where it shows, and burn the branches.

PEAR ORCHARDS.

The old fashioned pear trees that grew to the size of some oaks and yielded annual crops of many bushels were not, says the Philadelphia *Record*, affected by blight. The trees were frequently subjected to the axe in order to rid them of their surplus wood, but little careful pruning was given them and they received no cultivation at all. The fruit, however, was entirely different from that which is now sold in the market, being hard and fit only for preserving. With the introduction of the Duchess and Bartlett pears and other varieties, the quality of the fruit was greatly improved, but the trees do not grow as large as the common kind, nor are they as hardy. With the advent of the improved pear came the blight, and since it made its first wholesale attack on the pear orchards it has ruled supreme, as no remedy other than the destruction of the tree is known for its cure. The methods of cultivation may have much to do with this disease, but probably forcing the trees to a very rapid growth is the cause, more than anything else, of pear blight. Our orchards of improved pears have not been treated in a natural manner, for the pear tree is a slow grower and does not bear until it is a fair-sized tree, but growers have compelled the improved varieties to assume conditions not suitable for health and vigor, which render the tree subject to the blight and other diseases incidental to pears. Two fruit growers at Newfield, N. J., procured the same varieties of pears from the same nursery and put the trees in the ground at the same time. They were cultivated, however, quite differently. One of the growers yearly cultivated in

his orchard garden crops, with occasionally corn, applying liberal dressings of manure, under which treatment the trees grew rapidly, and not only improved in appearance and color, but bore early and gave large yields. His neighbor did not use his orchard for any other purpose than the growing of grass, which was occasionally mowed, ploughed and seeded to grass again. The orchard that was kept in grass has on it to-day trees that are only half the size of those in the orchard that was cultivated with hoed crops. It has never borne as well, nor has it equalled it in appearance and other respects. The blight, however, has nearly destroyed the orchard that looked the most promising, while the slow growing trees are as sound as when first set out, although both orchards are very near each other. The pear orchard that gave its owner such heavy yields is nearly destroyed, but the other seems likely to last for several years, not a tree being affected with the blight. As these orchards were alike (soil included) in every respect, but differently treated, this experiment may furnish a lesson to pear growers.

MY CELERY HOUSE.

I have used this house for three years for storing and blanching. It will hold 30,000 stools, and I have not lost \$5 worth from rot or other causes. The plants have been well blanched, crisp, without rust or earthy flavor. I have no trenches to dig, no banking for winter and less earthing during growth. My stock can be inspected any time, taken out in cold or rain or at night, cleaned, washed and packed for market in the same place. Celery once handled can here be blanched in three weeks, and the temperature can be kept cool and damp, to insure the best quality.

The cellar, sixteen by forty feet and three feet deep, has a wall eighteen inches thick and rising a foot above ground, upon which plates for rafters are bolted to keep the roof from spreading. Inside, the house is four feet high at the eaves and eleven at the peak. The ends are weather-boarded on both sides of six-inch studs and filled in with sawdust, which is also packed between the roof and a lining of rough boards nailed on the lower side of the rafters. This is frost proof and protects against sudden changes. A ventilator ten inches wide the entire length of the roof at the peak, with lifting lid worked by a lever inside, admits air when needed and gives escape for any heat that may generate from the celery. A door at each end, lined and packed, a small window over each to admit light, and steps to get down with, complete the house, costing about \$200.

In putting away the celery, posts are set in the ground ten inches apart beginning at each side of the end of the house and coming towards the centre, which gives seven feet to the side, leaving a passage-way two feet wide through the entire length of the building. Three sets of posts on one side and four on the other will just suit sixteen-foot boards, two and a half length on one side and two lengths on the other, with a space eight feet square for a washing-tank and room to prepare for market. Beginning next to the wall, we nail a board one foot wide to the posts, so that the tops of the celery are even with the top of the board, leaving a space from four to six inches between the bottom of the board and the ground, through which one hand can be thrust to pack the roots, while the other holds the tops of the celery above. We have some loose rich soil to throw over the roots, but not on the stalks. After the trench or box is full from end to

end, with a hose throwing a small stream we wet and settle the soil around the roots, which form new rootlets in a few days. We never handle when wet or damp from any cause, neither allow the stalks to be wet when wetting the soil around the roots.

After the house has been filled about five days, care must be taken to give proper ventilation at the top, as there will be a violent heat created by the mass of celery so packed, and unless that heat is allowed vent rot will follow. After this heat subsides there will be no further trouble or danger, though it is best to ventilate freely in warm weather, but always from the top.—*T. F. Baker.*

SOIL FOR ROSES.

The ground for roses should be thoroughly drained and rendered as porous as possible, and fertilized. In clay soils the use of sand, lime, soot, burnt earth and loose, light vegetable matter, such as leaf mould, will alter the texture and improve the quality. At the time of planting, strong fertilizers are not required, and should not be given until the bushes have become established; they then like rich soil, which should be made light for the delicate rooting kinds, and more tenacious for the robust and hardy, and it would be reasonable that the classes and varieties differing in their nature should have more than one soil, if all are to receive that which is the most suitable. A renewal of the surface soil with old pasture loam every two or three years will supply important elements unattainable by any other method. We should avoid the application of more fertilizers in a soluble state than the plants can consume. It is well that the earth should be filled with stimulants in different stages of decomposition, that the plant may in all conditions of growth have plenty of food. When the plant is growing and

especially when flowering, weak liquid manures may be applied. Bone and potash act favorably early in the spring. A frequent sprinkling of water adds health to the foliage and prevents injury by insects. The earth should be wet only when dry, and then thoroughly.—J. H. BOURN, *before the Massachusetts Horticultural Society.*

EPIPHYLLUMS.

The two species of Crab's Claw Cactus, *Epiphyllum Russellianum* and *E. truncatum*, the hybrids of which ornament our greenhouses during winter with their exquisitely colored and strangely shaped flowers, are natives of Brazil, where they are found growing upon the trunks and branches of trees. They are of the easiest culture, blooming abundantly even when small, and adapted as well for the window-garden as the greenhouse. Grafted on the *Pereskia* stock, with stems from eight to twelve inches high, they make beautiful objects; but much more lovely are they when grown on their own roots and in a basket. They do not want anything else in the basket with them, but show their beauty best when planted alone, the long fringy flowers being just the kind most suitable for adorning the flat, leaf-like branches, and which are set off to best advantage when drooping over the edges of the basket.

The soil most suitable for them is good, turfy loam, having about one-fourth of thoroughly decayed manure or leaf-mold, well mixed, and sufficient sand to give porosity to the whole, as it is imperative to allow the water to pass off freely, anything approaching sourness of the soil from too much water being detrimental to the plant's growth. When the plants get large enough to be put in five-inch pots and over, they should have plenty of drainage.

Cuttings should be taken off just before the plants begin to grow, and inserted in the cutting-bench, where they can get a good, sharp, bottom heat; when rooted, put into small pots and place near the light. As they increase in size, put into larger pots, and keep growing by giving plenty of water, pinching the points out of any shoots which may be taking the lead. About the month of June set out of doors in a sunny position, and when their growth is completed, withhold water gradually, but not sufficient to cause them to wilt. If wanted to flower in succession, and a good many plants are on hand when housed in the fall, keep part of them in a cool house, and bring into heat as required; but do not water much those kept in a cool house, as they are apt to loose their roots from rot, especially if growing on their own roots. Grown on the *Pereskia*, they are more hardy, and capable of enduring greater hardships than on their own roots. They can be grafted on some of the *Cereus* family, but the *Pereskia* is the best stock for their successful culture. The number of flowers a single plant sometimes produces, when well treated, is astonishing. I counted, to-day, the flowers on a plant growing in a six-inch pot, and the number was seventy-six. The flowers are very useful in the arranging of bouquets and baskets, lasting a good while in perfection after being cut.

The following are some of the best and most distinct kinds in cultivation:

E. Russellianum.—This species flowers later in the season than *truncatum*, and has flowers of somewhat different shape. There are some varieties of this species distinct and superior, the most conspicuous being *rubrum*, having large, bright red flowers.

E. truncatum has large, rose-colored flowers, and blooms earlier in the season than the preceding species. Seed-

lings from this, and also hybrids between this and *Russellianum*, are numerous, some of them of the most delicate colors. Among them are *bi-color*, white edged with rose, fine; *Ruckerianum*, dark red, violet center; and *violaceum*, pure white, purple edges.

This class of plants deserves better treatment than is generally given to it; although, for all the neglect and inattention the plants receive during summer, they will often bloom during winter. They repay good treatment as well as any plants, and it is during the period when they are least attractive that they prepare for flowering, and should have the most attention. — *American Garden*

THE BENEFITS OF FRUIT.

Among the most admirable of the characteristics of an advancing civilization seems to be a tendency to demand fruit in ever-increasing quantities. This is shewn by the speed with which the enormous supplies now poured into the market are disposed of. In the United States ingenious physicians have adopted a plan of curing inebriety, which depends largely upon the adoption of a fruit diet. The "grape-cure" has, of course, long been known in Europe as a pleasant and efficacious way of treating certain ailments; and the salts and other chemical ingredients contained in fruit are found to act as a substitute for alcoholic liquor, and also, it is said, as a remedy for the drink-craving. However that may be, it is an undoubted fact that an increasing number of individuals, not being drunkards, do in this country, as every summer comes round, adopt of their own free choice the fruit-cure for thirst. In every age and in every country the natural love for fruits which has been implanted in the human breast has been strikingly exemplified in the imagery of the celestial regions. As a refresher

and a blood-purifier fruit stands unrivalled, and the only precaution which need be inculcated is to beware of that which is unsound. Barring misadventure, however, a fruit harvest is generally sure to be a profitable speculation; and, as it enriches the growers so, or in even greater measure, it is certain to benefit the consumers. — *London Telegraph*.

PRUNING THE CURRANT.

The late much lamented Charles Downing advocated cutting out the superfluous buds when the slip is first set, and starting from the ground with a single stock, which is allowed to branch out a foot from the earth, and grow to the height of three or four feet. Currants trained in this style of dwarf trees are not only ornamental, but bear fine fruit and have the advantage of being easily kept free from grass and weeds, and are convenient to prune after several years of growth, by cutting out a portion yearly of the oldest branches and allowing new shoots to take their place.

On the other hand many of the most successful cultivators prefer the bush form; but to have success for a term of years, the ground must be stirred often so that the bushes may be kept free from all other growth.

After trying both methods of training I prefer the bush form for the following reasons:—the currant is a great bearer of fruit and this tendency to overbear, after several crops, so exhausts the older branches, that a portion of them—depending upon how much enfeebled they are—need to be removed yearly, and only the most vigorous new shoots allowed to take their place, the weak ones being cut back to the roots, that the top may not become too thick. By this mode, as there is no main trunk to be kept, the whole bush is renewed in few years, three or four at most, which is

more easily done than in the tree form. A second reason why I prefer the bush form is that the currant like all other good fruits, has its insect enemies, which if not promptly destroyed, themselves will destroy its vigor. Nothing can be more weakening to any plant than to have its foliage suddenly stripped off, as so often happens to the currant when the worm is neglected. I find a perfect remedy for this in mulching heavily with coal ashes, after loosening the earth in the fall, or as soon as frost is out in the spring. Another—but most insidious because concealed—enemy of the currant, is the borer, which perforates the stem its entire length, and soon destroys its vigor. The only remedy I know for this is to cut away the branch below where it is punctured, and burn all such to destroy the borer within.

Having wandered so far from the subject of pruning currants, in giving my own experience in raising them, I repeat that whichever form is adopted, the tree or bush, a portion of the old growth must be cut away yearly to give place to new and thrifty shoots.—S. C. HARLOW, in *Home Farm*.

APPLES FOR NORTHERN NEW ENGLAND, AND GOOD FOR NORTHERN ONTARIO.

Here is a list for northern New England, which does not include a single variety now grown in southern New England and New York, yet every one of them is the equal, in its season and use of the best fruits of like season and use in that section.

SUMMER—Yellow Transparent, Grand Sultan, Charlottenthaler, Tetofsky.

AUTUMN—Switzer, Peach of Montreal, St. Peter's Prolific Sweeting, Duchess of Oldenburg, Golden White.

WINTER—Wealthy, Scott's Winter, Newport Winter Sweet, McIntosh Red, Giant Swan (of Minnesota).

In addition, we have on trial the following most promising Winter Russians from the importations of the Iowa Agricultural College:—Longfield, Antonovka, Anis, Titovka, Arabskoe and Bogdanoff. These Russian and "iron-clad" Apples have their place, and a big one, in these United States.—DR. T. H. HOSKINS, in *American Garden*.

THE BLACK WALNUT.

One of the most valuable trees of the North American forests is the Black Walnut (*Juglans nigra*). It is a hardy tree, with pinnates leaves and deeply furrowed bark. The flowers are *monœcious*, that is, the staminate and pistillate grow on the same tree. The male or staminate flowers are produced in rather short catkins, while the fertile or pistillate are in terminal pairs. The species is widely distributed, its native habitat extending from western Massachusetts to eastern Nebraska and Kansas, and from Ontario, Canada, to northern Florida and Texas. But the greatest aboriginal growth, both in numbers and magnitude, was found in the forests which covered the river bottoms and hillsides in the region lying between the great lakes and the Ohio River. Some specimens found there were truly forest giants. On the shore of Lake Erie, near the mouth of Walnut Creek, in Western New York, a Black Walnut tree was cut, some 50 years ago, which attained much celebrity as the "big tree." The hollow lower section of 15 feet, after being exhibited in this country, was carried to England, and there converted into a gin-shop. No authentic data of its actual dimensions are at hand, but tradition gives its diameter as between 12 and 15 feet. Near where that grew, a freshet, a few years since, revealed a buried Black Walnut trunk which was afterwards unearthed. The "butt cut" was nearly eight feet in

diameter, and was split into quarters with wedges to bring it within reach of a mill-saw. Of course these were exceptional growths, and show the ultimate magnitude attained by the species under favoring conditions; yet the average growth is from three to six feet in diameter, and the height from 60 to 90 feet.

As a Timber Tree, it is the most valuable of our native species. The wood is a rich, dark brown, deepening with age, fine grained, and susceptible of a high polish. For cabinet work, gun-stalks, counter-tops, stair-rails, and fine inside finish for buildings, it is unrivaled by any other native wood. In the Chicago market, good Black Walnut lumber is quoted at \$50 to \$150 per 1,000 feet, board measure, in car-load lots. Crotches, burls and other parts with feathered or wavy grain, sell at very much higher prices for veneers. In the early days, while the country was still covered with "the forest primeval," the settlers were accustomed to work up this timber into fence posts and rails. That which was not straight in the grain was burned, to clear the ground. Many farms in Ohio and Indiana were laboriously cleared of Walnut timber which would now be worth thousands of dollars more than the value of the land from which it was cut.

For Cultivation on the prairies and eastern borders of the plains, the Black Walnut is deservedly popular. At the 17th Annual Meeting of the Kansas State Horticultural Society this tree was placed at the head of a list of 15 species which had proved successful in that state. The Black Walnut, when young, is successfully planted from nursery rows, but having a long tap-root, it is better, perhaps, to plant the nuts where the tree is to remain. They are gathered only in the fall, and deposited in beds, two or three deep, were

they are lightly covered with earth or sand. Keep the bed moist through the winter, and subjected to the action of the frost. When fairly sprouted in the spring, the nuts are carefully taken up and planted where the tree is to stand. It is recommended to plant in alternate rows with Cottonwood, Box Elder, or some rapid growing evergreen, to shelter the young trees from high winds and hot sunshine. The sheltering trees may be removed before they interfere with the growth of the Black Walnuts. The latter begin to produce nuts when eight or ten years old. The nuts, when fresh, are large and roundish, somewhat resembling a green orange. The kernel is less palatable than that of any of the allied species, somewhat rank in flavor, yet is relished by many. The largest market for them at present is for planting; they bring little for eating purposes.—*Prairie Farmer*.

WHITNEY'S NO. 20.

During a late visit to Mr. A. R. Whitney's orchard we found something over 1,000 trees of this famous variety in bearing, every one of which seemed to have passed the last severe winter unscathed, while nearly all other varieties suffered, as our apples generally did throughout the Northwest. Their hardiness is established beyond cavil. The parent tree has fruited abundantly every season since 1854, but this year its crop is light. Yet the tree seems perfectly vigorous, and good for many more paying crops. Mr. Whitney's history of the origin of No. 20 is as follows: In the autumn of 1849, he washed the seeds from a lot of pomace from the common Siberian crab apple. These were planted in the spring of 1850. The following winter he grafted 500 Willow Twigs on these Siberian seedlings. In September, 1854, one of the seedling roots, in nursery plot No. 20, on which the graft had perished, as

did many others that season, was found bearing. This one tree was left standing and the others cleared away. In the autumn of 1859 or 1860, samples of the fruit were shown in the *Prairie Farmer* office and public attention called to No. 20, which name had been given it from the plot on which it grew. The fruit of No. 20 bears little or no evidence of crab origin. It is of very pleasant flavor, excellent for table use, or for preserving and canning. For both quality and abundance of fruit and hardiness, No. 20 is a most valuable acquisition to the orchard.—*Prairie Farmer*.

APPLE TREES FOR THE NORTH-WEST.

For the special benefit of such as have had little or no experience as to the best varieties of apple trees to grow here in the Northwest, we name the few varieties which have passed nearly unharmed the most trying ordeal ever known to the old settlers of this locality. We name these four kinds as the best, all things considered. Each of these kinds is now growing and bearing fine crops of choice fruit, which is the best possible test known to orchardists. Let experts and experimenters set and care for as many more of the old or new kinds as they have patience, time and money to spare. But let the man who lives by his hard labor set only these kinds, and if you are advised and beseeged by the many smooth tongued tree agents to add or extend the list, don't you do it. If you do so remember that you do it at a fearful risk of disappointment and failure. We know of no law that compels any man to please a tree tramp.

We name the Duchess first as being the most reliable of all for hardiness. The Wealthy has been occasionally injured in close protected sites. But all points considered, it has no peer either

in America or Europe where hardiness is a necessity. Whitney's No. 20 and Briar's Sweet are commonly called hybrids. They are the two best canning apples known. No. 20 is the best cooking apple; the Duchess next. All but the Duchess are fine apples to eat out of hand. They all bear young, abundantly and annually. The Duchess is an early summer apple. The Whitney and Briar's Sweet are early Fall. The Wealthy early Winter. We have no tried Winter apple to recommend. The hopeful Walbridge is a failure. This has been our last hope but it has perished, and let it go. "It's a poor apple anyway."—EDSON GAYLORD, in *Western Rural*.

MUSHROOMS—OPEN AIR CULTURE.

In England, mushrooms are grown in large quantities by beds made in the open air, and are regarded as the most profitable crop raised by the market gardener. The climate in England allows mushrooms to be grown all the year round, but the heat of our summer months, and the severity of our winters, essentially curtail the time during which mushrooms can be cultivated out of doors. There is no doubt that with us, beds would be productive during the months in which wild mushrooms are abundant, and probably they could be grown in the spring months also. To make the bed, manure from horse stables is needed. The long litter is forked out and laid aside to cover the bed later, and the remainder, consisting of equal parts, more or less, of solid droppings and short litter, such as one would use for a hot-bed, is made into a heap. The heap has from four to six turnings on alternate days, to bring all into an even state of fermentation. The beds are made two and a half feet wide at base, six inches wide at top, two and a half

feet high, and of any convenient length. When the ridge is three feet high, beat and tread it down to two feet; then add the remaining six inches, beating it firmly with the fork. After it is built, and its temperature an inch below the surface is eighty degrees, the bed is to be spawned. Spawn is sold at the principal seed stores, in the form of large and thin bricks. Each of these bricks is broken into about eight pieces; these pieces are thrust into the bed some nine inches apart. The spawn, if good, will commence to "run" in about three days, when the bed is to be covered with soil, or "cased," from an inch to two inches thick, according to the stiffness of the soil. The mushrooms break up through the covering of soil from below. To retain its heat, the bed must be covered, using the coarse litter separated from the manure for the purpose, and other straw, if needed: the covering varying in thickness from six inches to two feet, according to the temperature.—*American Agriculturist*.

LILY CULTURE.

The increasing culture of this class of plants within the last decade is astonishing; and along with the increasing culture has been the introduction of some excellent new species and varieties. A bed of lilies in a conspicuous place in the garden has an effect peculiar to itself, especially if it contains a goodly number of the large flowering kinds. Mixed at regular intervals along the herbaceous border with other hardy plants, they also look pretty; in fact, in any place where the ground is suitable they are pretty.

For soil, any kind in which flowers of all kinds flourish, if well drained, is suitable for their culture. Have it deeply dug, having thoroughly incorporated through it a good application of well rotted barnyard manure. See that it is well decomposed, for if not,

fresh manure coming in contact with the bulbs is very apt to make them decay. Often people in their anxiety to fertilize the ground well, for the reception of some newly received lily bulb, dig into the ground a large amount of fresh manure, and plant their bulbs in it; then wonder why they never start into growth. The reason is obvious. The fresh unfermented manure destroyed the bulbs before they got a chance to start. Better, if manure cannot be got that is not well decayed, plant in the soil as it is, and apply a good coating of the fresh manure on the surface of the soil after the planting is done. Any bed shaded considerably, but not over-hung with branches, is a good place to plant lilies; they succeed better in just such a position than most anything else, and will remain for years and flower freely every season without lifting to replant.

Lilium candidum, and allied kinds, are best planted in August, or not later than September, for this reason, that in order to secure good flowering shoots the following season, a good growth has to be made in the fall, which will not be done unless planted thus early.

L. auratum, *speciosum*, and such kinds, do best planted during October and November, and should be planted five or six inches deep.

When replanting a lily bed, select the largest bulbs and plant them by themselves, separate from the small ones, which can be set thickly together in some place where they can be left to make a growth and form flowering bulbs.

Some beautiful species and varieties of lilies are natives of the United States, the best of which are: *L. philadelphicum*, *L. superbum*, *L. canadense*, *L. pardalinum*, *L. parryi*, *L. californicum*, and the beautiful *L. Washingtonianum*. Among exotic species, but well adapted for out-door culture, select

L. auratum, *L. tigrinum* and varieties, *L. thumbergianum*, *L. candidum*, *L. kramerii*, *L. chalcidonicum*, *L. tenuifolium*, and the many varieties of *L. speciosum*.

During winter the bed should have a good mulching of manure or leaves, the rough part of which should only be removed in the spring, the rest being left to serve as a mulch during summer.—M. MILTON, in *Country Gentleman*.

THE SHAFFER RASPBERRY.

This raspberry was a chance seedling which sprang up in a garden twelve miles from Rochester, N.Y., among red and black raspberries. It has been thought by many that it was a hybrid, but no one has claimed this for a certainty.

The fruit will remain on the bushes a long time after they appear to be ripe, and will continue to improve in quality, until they drop off on the ground. Those who have not eaten Shaffers with cream, after reaching the last stages of ripening, have never tasted Shaffers in their best state. In this condition, however, their color has become very dark, and they are exceedingly soft. Therefore, for market purposes, they are picked while the color is bright and before they are entirely ripe. It thrives on sand or clay equally well, and it is not absolutely necessary to have rich soil. It bears enormous crops here on thin land. I do not understand why the Shaffer should prove as hardy as it does in the severe sections of the West. When it was first introduced, my friends in Northern Iowa asked if I could recommend it for that locality, and I told them I could not. I did not think that it would be hardy enough. But to my surprise it succeeds there, and gives the best satisfaction. Correspondents have written recently that it has

passed through the Winter safely with the thermometer 40 degrees below zero.

This raspberry is attracting the attention of canning houses. The proprietor of one of our largest at Rochester, says he thinks it is one of the very best for that purpose. Canning houses desire a fruit possessing marked character. A sweet, mild, berry would be about worthless for canning. One suitable for that purpose should have pronounced raspberry flavor, and possess great acidity. The popularity of the Wilson Strawberry as a canning fruit is largely owing to the acid it contains. Nothing but a sour berry will do. Sweet berries that are much better for table use fresh, are not valued by canning houses. The Shaffer Raspberry has a faculty of long endurance. The parent plant remained in full bearing for fifteen years, and I presume is in good condition yet. Its roots are far reaching, and remarkably vigorous. The defect of color in the Shaffer can very near consigning it to oblivion. On account of its purplish color, I hesitated long before introducing it. It is an evidence of its valuable characteristics, that it has become popular in spite of its uninviting color.—CHARLES A. GREEN, in *Rural New Yorker*.

ANOTHER LARGEST AND BEST STRAWBERRY.

Mr. R. Johnston is introducing a strawberry which he has named Ontario in honor of our magnificent Province we presume, which he describes in a recent number of Fruit Notes to be the strongest plant of any variety he has ever grown, free from burning in the sun, and from all disease whatever, and producing the largest berries he has ever gathered in his long experience of five and twenty years. In form he says they somewhat resemble Cumberland Triumph, but are much brighter in color, that visitors pronounce it the best

flavoured berry they have ever seen, sweet but sprightly, fairly productive on light soil, doing better on better land, perfect in blossom, and he is confident that because of its firmness, large size, bright appearance and quality, it will be a very popular market berry. The season of ripening is about the same as that of Manchester. Wonder if Mr. Johnston has fruited Jewell, which was the largest berry out and the strongest plant a short time ago.

BEGONIA RUBRA.

The foliage was attractive enough in itself to make the plant very satisfactory and well worth growing, but it was magnificent when the clusters of flowers were developed. The bright coral-red blooms, borne on stalks of the same color, formed a most delightful and striking contrast with the foliage. The plant received more admiration from visitors than any other one in my conservatory that winter. It kept growing and blooming, and from that time to this it has never been without flowers on every branch. For a year and a half it has been in constant bloom, and has never shown any tendency or desire to rest. Several times over forty clusters of flowers were counted on it at one time, and each cluster was made up of dozens of individual flowers. The flower-stems are produced at the axil of each leaf. They are long, drooping and much branched, and each little branch or sub-division of the stem bearing several flowers. The general effect of the flower clusters is much like that produced by *Euphorbia Jacquiniflora*, though on a much larger scale. It is seldom that we get a plant in which the attractiveness of flower and foliage is so evenly balanced as in this instance.—*Vick's Magazine*.

THE HELIOTROPE.

One day the botanist, Jussieu, was herborizing on the Cordilleries, when he suddenly found himself inebriated by the most delicious perfume. He looked around expecting to discover some splendid flower, but perceived nothing but some pretty clumps of a gentle green, from the bottom of which little capsules of a faded blue color were detaching themselves. He observed that the flowers turned toward the sun, and he therefore gave it the name of Heliotrope. Charmed with his acquisition, he collected some of the seeds, and sent them to the Jardin du Roi. The French ladies were charmed with it, and made of it a floral pet. They placed it in costly vases and christened it the flower of love. From thence it soon spread to other parts of the world, and has everywhere been greatly admired. One day, a very charming woman, who doted passionately on the Heliotrope, was asked what she could see in this dull and sombre looking plant to justify so much admiration.

"Because," she replied, "the Heliotrope's perfume is to my parterre what the soul is to beauty, refinement to love, and love to youth."—MRS. M. D. WELLCOME, in *Vick's Magazine*.

PROFESSOR BUDD, of Iowa writes to the *Prairie Farmer* of the Bogdanoff apple, speaking of it in very high terms for its hardiness, color, size, keeping, and dessert qualities. During the last cold winter it bore the severity of climate exceedingly well, coming out with its wood bright and uncolored, while the Wealthy was discolored. He describes the Bogdanoff as similar in appearance to the Domine, but larger and higher colored, and keeps well until May. We make it our duty to learn all we can of fruit that promises well in each section, and describe them from those who test them. When we speak of hardy varieties, they are recommended especially for severely cold climates, and not for general cultivation.—*Farm and Garden*.

AUTUMN LEAVES.

(For the Canadian Horticulturist.)

And hast thou thus been cast away,
 Poor sear and yellow leaves;
 Short has been thy happy day,
 Ah! how my lone heart grieves.

I've watched thee dancing in the sun,
 "Trees have tongues"; I've heard thee say,
 "In oblivion's gulf we'll soon be flung,
 Let us be merry while we may."

Poor cushioned leaves, you've done your duty,
 And played your little part so well;
 Living your span, in faultless beauty
 Within this flowery dell.

Oh when oppressed by anxious care,
 Thy sweet Pylsian shade
 Of fluttering leaves, and baby air,
 A sanctuary made.

Sweet autumn leaves, I too, like thee,
 Have had my joyful day;
 But it is nature's firm decree
 That we should fade, fall, and decay.

But, blessed is the hope to me,
 All who the "Truth" receive,
 The glorious "Tree of Life" shall see,
 And kiss the "healing leaves."

Montreal.

GRANDMA GOWAN.

THE EUMELAN GRAPE.—From my experience I would give up a good many fancy grapes before I would spare the Eumelan. It has one fault—it is shy of starting and I have not been successful in raising new plants. But the fruit was worth 20 cents a pound in Montreal when Concord was selling for nine cents. It is a good bearer with me, never drops its berries. So, like doctors, grape growers differ in opinion.—ANNIE L. JACK, in *Rural New-Yorker*.

THE SALOME APPLE seems to be growing in favor in Illinois, being very hardy, productive, and a long keeper. The apple is of very good quality, size only medium, color from a light to a dark red or nearly so. Bears well annually, but more heavily alternate years. Keeps well until May or even June. The *Western Rural* says in the issue of June 13th, that samples received at that office from Mr. A. Bryant, were then as sound as bullets, and gave evidence of being good keepers — *Farm and Garden*.

THE JESSICA GRAPE.—This new variety of white Grape, sent out a few years since by D. W. Beadle, of St. Catharines, Ontario, we found ripe on the 22d of August,

at Vine Valley, on Canandaigua Lake, ten days earlier than Champion, in the same locality, was fit to gather. At that time it was quite ripe, and had been so, apparently, for several days, as the birds had discovered its condition, and eaten quite a number of the berries. The fruit is of medium size in bunch and berry, has a pleasant, but not a high, flavor, somewhat acid, without foxiness, and no hard pulp, but juicy. Altogether, it is a fair Grape, and the earliest we know. It is a strong grower, with thick, healthy foliage.—*Pick's Magazine*.

ABOUT CALLAS.—Every one knows that the Calla requires rich soil and frequent watering, but very few amateurs give enough heed to this so as to have the earth sufficiently rich or the water supply sufficiently abundant. Nothing but the most severe perseverance in having the earth as much as half manure will insure success; then the plants when growing vigorously must not only be kept as wet as possible, but they delight in warm, and even moderately hot water. As ordinary saucers are shallow, we have placed a pot of Calla in a large earthen wash-basin, which we keep filled with warm water. It is also requisite to cut off each flower as soon as it shows any signs of withering; the result will be that a new bud will very soon make its appearance, often before the old stem is wilted. —*American Garden*.

NEWLY PLANTED TREES—Importance of Cultivating.—The soil will dry very rapidly and to a great depth if allowed to get hard and compact. There is but a small space left for air in solid soils, and from this fact they become hot and dry to a great depth in the summer. While if air is present, as it is in loose soils, being such a poor conductor of heat, it will allow only a small portion of soil to become hot, which soon cools at night and is filled with a copious dew, not only retaining the moisture already in the soil, but adding to it at a season when moisture is especially desirable. Newly-set trees are always benefitted by cultivation, because all their roots are surface-roots, and cannot thrive in a hot, dry, compact soil. Hence the necessity of summer surface-cultivation of newly-set trees.—*Farm and Garden*.



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INDUSTRY.

THE

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[No. 12.

THE INDUSTRY GOOSEBERRY.

We have at present but a meagre supply of desirable gooseberries adapted to our climate. The English varieties will succeed in but few localities, and our American species have not yet been brought up to the standard in size and quality. It is to be hoped that some of our experimenters will be so fortunate as to raise seedlings from our native varieties which will not be subject to mildew, whose fruit will compare favorably in size and flavor with the European sorts.

The Industry, of which our colored plate is a good representation, is a foreign variety which Messrs. Ellwanger & Barry have found to do well on their grounds, it having fruited with them for four seasons without shewing any signs of mildew. In a letter written in reply to our inquiry as to its behaviour this season they say that it has during the past season of 1885 fully sustained its character for health, vigor, and productiveness, but cannot say that it has not shown any sign of mildew. The season was bad, wet, with sudden changes of temperature, and a little mildew was observed in some cases, but was scarcely noticeable, and did no harm. Even the

American sorts were affected. Mr. Thos. Beall, of Lindsay, says that the Industry Gooseberry was very seriously affected with mildew this season on his grounds. We have had it for only one season and find it to be a very vigorous grower. In the summer of 1884 we saw it in the grounds of these gentlemen, and were very favorably impressed with the quality and size of the fruit. They have also found it to be immensely productive. Should this variety prove on general cultivation to be able to maintain its vigorous and healthy character, we shall have much reason to thank these gentlemen for bringing it to the notice of fruit growers.

During the past summer our small sized American gooseberries brought very satisfactory prices, yet the few Whitesmiths that found their way to market brought nearly twice as much, on account of their superior size. Could we have varieties as large as the Industry and as productive as our native sorts, which can be depended upon from year to year, the grower would find their cultivation exceedingly remunerative. We are moving even now in this direction.

THE END OF THE YEAR.

TO OUR SUBSCRIBERS :

It seems but yesterday that we placed in your hands the number for January, now we lay before you that for December. These pages have been filled throughout the year with useful information, such as will keep you abreast of the times on horticultural subjects, and be of service to you in this part of the world in which we live. There have been no serial stories, no humorous anecdotes, no column of witticisms. It is our intention to maintain this character for the *Canadian Horticulturist*. Does this meet with your approbation? If it does, will you kindly express your approval by promptly renewing your subscription so that it will reach this office by the fifteenth of December. The publishing committee has decided for reasons of economy to print only sufficient copies to supply subscribers whose names have been received at the time of going to press. This will make it impossible to supply back numbers. Subscriptions will run for one year from the date on which they are received. Therefore if you desire to secure all the numbers of the *Ninth Volume* it will be necessary that your subscriptions reach us by the day mentioned.

When you remit the subscription will you please mention which of the premiums you desire should be sent to you in the spring. If this is not done then there is danger that you will forget to do it afterwards, and be disappointed at not receiving the article you want, and by that time think you have asked for.

Another favor. If you think our *Canadian Horticulturist* worthy of being sustained, and its publication continued, please to show it to your friends, and use your influence to increase its circulation.

Pardon us. One more request. Please communicate the results of your

own experience, whether successful or unsuccessful. Your experience will be helpful to some fellow toiler; and your giving of it to others an act of kindness so akin to mercy that it will be twice blessed.

"It blesseth him that gives, and him that takes."

SUBSCRIBERS' PREMIUMS.

The object which the Fruit Growers' Association of Ontario has in view in offering these plants and seeds to the subscribers to the *Canadian Horticulturist* is two-fold: the first that these may be planted and tested in our Province; the second that the person testing will report his experience, favorable or unfavorable, as the case may be, through the medium of this Magazine, so that intending planters may have the benefit of that experience to guide them in their selections. The Directors regret that so few have taken the trouble to make a report of their experience. They consider that every subscriber who accepts of one of these premiums does so with the understanding and implied promise on the part of the recipient that a report will be made to the *Canadian Horticulturist* of the receiver's experience with the article received.

Every subscriber will receive, in addition to the monthly issue of this Magazine, the Fruit Growers' Association Report for 1885, which is already in the hands of the printer, and whichever one of the following articles the subscriber may designate to have sent in the spring of 1886, namely: (1) Three plants of the *Ontario Strawberry*; or, (2) a yearling tree of the *Russian Yellow Transparent Apple*; or, (3) a plant of the *Lucretia Dewberry*; or, (4) a yearling vine of the *Early Victor Grape*; or, (5) two plants of the *Marlboro' Raspberry*; or, (6) a package containing a paper of seeds of *Gypsophila paniculata*, *Aquilegia Cerulea*.

and *Delphinium*, mixed colors. These will all be sent by mail, post-paid.

SEEDLING APPLES FROM ELORA.

We have received from Mr. James Middlemiss, of Elora, a sample of a seedling apple, the tree of which is some fifteen years old and has been in bearing a number of years. We are told that the crop this year was quite heavy, though there was a very good show of fruit both last year and the year before. The sample received was about the size of a well grown Grimes Golden, of a rich yellow color, and in good eating condition. In quality it will rank as "very good" by Downing's standard of "good," "very good," "best." Mr. Middlemiss states that he kept this fruit last year until past the new year; and thinks that with care it would probably keep till the end of January.

BEAUTIFUL FLOWERS WITHOUT COST.

Have you considered what a variety of beautiful things are offered you for the trouble of obtaining only five new subscribers? If you want a sample copy of the *Canadian Horticulturist*, or of the Fruit Growers' Report, or of both of them, you have only to address a postal card to the Editor, St. Catharines, asking for them, and they will be mailed to you at once. Is there anything more beautiful than the various collections of flowering plants offered you? That *Chionodoxa* with its light azure blue flowers with white centre is just charming; the lily has large beautiful snow-white, trumpet-shaped flowers; *Fritillaria* bears lily-like flowers, singularly chequered; the Spanish Iris are most richly colored; and the *Narcissus* flowers are snowy white with a lovely red cup. But it is not needful that we describe these beautiful things, the most of them are well known to our readers as very desirable orna-

ments in every flower garden, as charming adornments to every home. Can you not spare a little time and show our *Magazine* to your friends and neighbours and send us their subscriptions for the coming year. They will surely thank you before the year closes for calling their attention to a monthly that imparts so much information, that is so very useful to every cultivator of the soil, even though it be but one mere rood of land; and you will have helped us to make it yet more attractive and useful, and by increasing its circulation to scatter yet more widely the seeds of improved Canadian horticulture.

CANADIAN HORTICULTURIST, VOL. VIII.

And the *Report of the Fruit Growers' Association* for 1884, will be sent to any subscriber, post-paid, for *sixty cents*, so long as there are copies on hand to send. A few copies of Vol. VII. and of the Report for 1883 yet remain, which also will be sent on receipt of sixty cents. The whole will be mailed to any address on receipt of one dollar. This is an unparalleled opportunity to secure a large amount of practical information worth many times the cost. Indeed it will save to any one interested in any way in horticulture many an expensive experiment.

CROWS DEVOURING APPLES.

A correspondent residing in Nova Scotia writes us that the crows are very fond of the Gravenstein apple, that being the only one out of a large number of varieties which they condescend to eat, and that this fall he lost over a barrel, the crows alighting on the tree and pecking the apples until they fell half eaten and ruined, but they would not touch them on the ground. He was finally compelled to gather them to save what remained.

PREMIUMS FOR NEW SUBSCRIBERS.

For five new subscribers and five dollars we will send prepaid any one of the following collections of choice bulbs or plants. This is an opportunity to secure a fine assortment of beautiful flowers and valuable plants without cost, other than the pleasure of doing a favour to your friends by introducing this monthly to their notice, and of enlarging the circulation and extending the usefulness of the only horticultural magazine published for the benefit of Canadian lovers of fruits and flowers:—

Collection No. 1, one *Chionodoxa lucille*, one *Lilium longiflorum*, two *Fritillaria meleagris*, two Spanish Iris, and two *Narcissus poeticus*; No. 2, five Tulips, two Chinese Poonias, one Spotted Calla, one Tiger Lily; No. 3, a collection of five different Lilies; No. 4, a collection of five different sorts of Iris; No. 5, two double and two single Hyacinths, and three double and three single *Narcissus*; No. 6, five Herbaceous Perennials—*Fraxinella*, *Dianthus*, Japan *Anemone*, Japan *Spirea*, and *Clematis Erecta*; No. 7, three hardy flowering shrubs—*Hydrangea paniculata*, *Spirea Van Houtte*, and *Purple Fringe*; No. 8, a collection of twelve different sorts of Flower Seeds; No. 9, four hardy Roses; No. 10, four Tea Roses; No. 11, three *Polyantha* or miniature Roses; No. 12, four Climbing Roses; No. 13, ten plants, to be chosen by you from the following list: *Geraniums*, single; *Geraniums*, double; *Fuchsias*, single; *Fuchsias*, double; *Petunias*, double, blotched and fringed; *Abutilons*, rose-coloured; *Abutilons*, white; *Abutilons*, straw-coloured; *Begonias*, scarlet; *Begonias*, rose-coloured; *Begonias*, white-flowered; *Coleus*, with most beautifully variegated foliage; *Hydrangea Thomas Hogg* and *Hydrangea Otaksa*. These plants will be securely

packed and sent by mail. You are at liberty to choose the ten from any one or more of these different kinds of plants. No. 14, six beautiful clove-scented carnations; No. 15, six Double Dahlias, different colours; No. 16, twelve *Gladiolus* bulbs; No. 17, twelve Tuberoses and six *Gladiolus*; No. 18, a Jessica Grape-vine; No. 19, a Niagara Grape-vine; No. 20, an Amber Queen Grape-vine.

For ten dollars and ten new subscribers we will send, prepaid, any two of the above collections you may designate; or if preferred, we will send you one strong yearling tree of the Russian Vladimir Cherry, grown from trees imported by the Fruit Growers' Association direct from Russia.

If you prefer books, we will send you, prepaid, on receipt of three dollars and three new subscribers, *Every Woman Her Own Flower Gardener*, 148 pages, bound in cloth.

For five dollars and five new subscribers, *Window Gardening*, 300 pages, illustrated with 126 engravings.

For twelve dollars and twelve new subscribers, Saunders' *Insects Injurious to Fruits*, 436 pages, 410 engravings, bound in cloth.

For fifteen new subscribers and fifteen dollars, the *Floral Kingdom*, a magnificent art book, splendidly bound, 450 pages, 200 illustrations.

THE RITSON PEAR.

We have received from Messrs. Stone & Wellington a specimen of this pear, which they inform us had its origin at Oshawa, Ontario, and that the original tree is now over sixty-five years old and still bears large crops of fine fruit. While other varieties have been planted in the same field that after a few years succumbed to the pear-blight or perished from some other cause, this tree has never been affected in any

way, either by the severity of the weather or by disease of any kind.

The pear received by us measured two and a half inches in length and six inches in circumference at its largest part. In shape it is obtuse pyriform, light green in color with splashes of russet. The flesh is tender, juicy, sweet, somewhat gritty about the core, quality "good." It seems to be in season from the middle to end of October. This may prove to be a valuable pear for some of our colder sections because of the apparent hardness and healthiness of the tree.

ONTARIO FRUITS FOR THE COLONIAL EXHIBITION.

The President of the Ontario Fruit Growers' Association, Wm. Saunders, Esq., London, Ont., has undertaken to superintend the preparation of a collection of Ontario fruits, for the Indian and Colonial Exhibition, to be held in London, England, next summer. He desires to receive contributions of choice specimens of fruit from persons residing in any part of Ontario, which will be preserved in fluid in glass jars. He now wishes to obtain all the varieties that can be had of apples, pears, grapes and nuts. Of large fruits three or four specimens will be sufficient; of medium size, six specimens; of small size, sufficient to fill a quart jar. The samples should be carefully named, and forwarded in baskets, by express. The express charges will be paid in London.

It is important for the credit of our Province, and the advancement of its fruit interests commercially, that this collection should be of great excellence; therefore, Mr. Saunders hopes that all who can will forward, and induce their neighbors to forward, samples of any fine fruit that may be had in their neighborhood. All such contributions will be duly acknowledged.

The following is a list of those who had contributed up to the 3rd of November:—

A. M. Smith, St. Catharines, 8 varieties of apples, 4 pears, 1 of crabs, 1 peaches, 3 grapes, 2 quinces, some peppers; also egg plants, and tomatoes.

S. Parnall, St. Catharines, 3 varieties apples, 3 pears, 1 crab apples, 1 grapes.

Beadle & Dunlop, St. Catharines, 3 varieties apples, 3 grapes.

Albert Pay, St. Catharines, 8 varieties pears, 1 peaches.

T. R. Merritt, St. Catharines, 6 varieties of pears.

W. Fletcher, St. Catharines, 6 varieties of pears.

W. Haskins, Hamilton, 7 varieties of grapes.

S. Burner, Hamilton, 20 varieties of grapes.

H. Saltmarch, Hamilton, 8 varieties of grapes.

John Mellon, Hamilton, 6 varieties of grapes.

S. Woodley, Hamilton, 18 varieties pears.

D. Murray, Hamilton, 5 varieties apples, 5 pears; also 11 jars of grapes, crab apples, and peppers.

Thomas Harper, Hamilton, 5 varieties pears.

John Gordon, Hamilton, 22 varieties apples, 3 pears.

J. W. Sinclair, Hamilton, 5 varieties pears.

R. Postan, Oakville, Niagara grapes.

Chas. W. Culver, Simcoe, fine Alexander apples.

B. Gott, Arkona, 2 varieties apples, 13 grapes.

P. E. Bucke, Ottawa, 9 varieties grapes.

W. Graham, Ottawa, 6 varieties grapes.

A. McD. Allan, Goderich, a very fine collection, consisting of 31 varieties apples, 16 pears, and 4 plums.

Thos. Beall, Lindsay, 6 varieties apples, 11 bottles of gooseberries, 2 strawberries, 1 currants, and an excellent sample of Niagara grapes.

S. P. Stipes, Barton, 1 variety pear.

Wm. Rynor, Barton, 3 varieties apples, 5 pears.

John Lamont, Barton, 3 varieties apples.

S. Lovel, Barton, 6 varieties apples.

D. Vanduzer, Grimsby, 3 varieties apples, 8 pears, 3 peaches.

W. P. Coyne, London, 1 variety apple.

P. Mackenzie, London, 2 varieties apples.

An excellent collection of apples and pears, forwarded by Mr. A. McD. Allan,

from the Ridgetown Exhibition, contributed by the Howard Branch Agricultural Society, consisting of 33 varieties.

George Nixon, Hyde Park, several varieties each of apples, pears, and crabs.

Wm. Kotmire, St. Catharines, 6 varieties apples, 2 pears.

R. D. Colgrove, London, 2 varieties apples.

D. Nicol, Cataraqui, 3 varieties apples.

J. B. Osborne, Beamsville, 4 varieties pears, 3 apples, 1 grapes.

James Briody, London, 3 varieties apples.

P. C. Dempsey, Albury, a fine collection, including 36 varieties apples, 4 pears, and 33 grapes.

Henry Woodruff, St. David's, Niagara grapes.

Dr. Flock, London, yellow egg plums.

James Griffiths, Westminster, Wilson's Early blackberries.

T. H. Parker, Woodstock, Glass' Seedling plums.

James Emmerson, Valencia, 10 varieties apples.

George Davy, Valencia, 3 varieties apples.

Henry Pattard, Niagara, four very fine samples of grapes, one being a very large bunch of Black Hamburgs, grown in the open air.

J. Ormond, Niagara, 3 varieties peaches, 3 apples, 1 pears, 1 grapes.

Gage J. Miller, Niagara, 7 varieties pears.

Edward Brammer, London Township, 6 varieties apples.

F. Farncomb, Newcastle, 7 varieties apples, 8 pears.

James Dorman, Byron, 5 varieties apples.

John Plummer, London, a fine sample of walnuts.

Judge Hughes, St. Thomas, Jonathan apples.

J. M. Denton, London, 3 varieties apples.

THE REYNARD APPLE.

Mr. Charles E. Brown, a life member of the Fruit Growers' Association of Ontario, says: "We have a seedling in this county, the Reynard, season November to February, a very large, symmetrical, round apple, greenish yellow, with sometimes a faint blush, that I should like to see tried in Ontario, and would be glad to send scions gratis to any one who will try it, with the assurance that they will be pleased with the result; also scions of a Cornwallis seedling, Bishop Bourne, from

seed of Ribston Pippin, of which you will see a notice in next report of the American Pomological Society. My idea concerning the Reynolds is that the quality would improve in a warmer region, and that it would be a valuable market variety."

We will give Mr. Brown's address to any one wishing to try one or both of these varieties of apple in Ontario.

VERBATIM HORTICULTURAL REPORTS.

In noticing the report of the Fruit Growers' Association of Ontario the *Rural New-Yorker* spoke in terms of commendation of the peculiar feature of these reports that the words of the speaker are taken down exactly as spoken by a skilful shorthand writer. One of its correspondents takes notice of this fact in the following terms:—The *Rural* is right, as usual, when it says that a full report of the discussions at horticultural meetings makes the most valuable part of the record when published. If *verbatim* reporting ever pays, it pays there. Even a little shade of expression from an expert, fully given, will sometimes speak volumes.

A DISHONEST TREE AGENT.

We notice that a dishonest tree agent by the name of Archibald Drinkwater has met with his deserts. It seems that he forged several orders for trees by increasing the amount ordered after the order was given, and that he tried this game on at least two different nursery firms for whom he engaged to sell trees. Fearing he might be called to account he fled the country and domicilled himself near Chicago, not being aware that the extradition treaty covered his case. He was hunted up by a shrewd detective, brought back and tried at the Fall Assizes in Owen Sound, and sentenced to five

years in the penitentiary. This may serve as a commentary on the old adage that "honesty is the best policy," and be a warning to others.

THE SMALL FRUIT GROWERS' ASSOCIATION.

We learn from Mr. S. Cornwell that the annual meeting of the Small Fruit Growers' Association of the Counties of Oxford and Brant will be held in the Town Hall, Norwich, on Thursday, January 14th, 1886, at 10 o'clock a.m. sharp. All persons interested in fruit growing are respectfully requested to be present at the meeting and take part in the discussion on fruit growing.

MICHIGAN STATE HORTICULTURAL SOCIETY.

The annual meeting of the Michigan Horticultural Society will convene in Conkey's Opera House, Benton Harbor, December 1, 2 and 3, 1885. Delegates in attendance will be entertained by members of the local society. The Convention will open on the afternoon of Tuesday, December 1, at 2.30 o'clock, and close with an evening session on Thursday. On the evenings of the second and third days popular lectures will be delivered. The first evening and the day sessions will be devoted to the discussion of topics connected with horticultural pursuits, the following being an outline of the programme:—

Tuesday—Market fruit growing.

Wednesday morning—The vegetable garden.

Wednesday afternoon—Ornamental horticulture.

Thursday morning—Amateur fruit growing.

Thursday afternoon—Arboriculture and forestry.

Kindred organizations are cordially invited to send delegations. For rail-

way certificates and further information, address the secretary, Chas. W. Garfield, at Grand Rapids, Michigan.

THE INDIANA HORTICULTURAL SOCIETY

Will hold its Annual Meeting at Purdue University, Lafayette, Ind., on the 1st, 2nd and 3rd of December, 1885.

The following are some of the subjects to be considered: Pears, Plums, and Cherries of North-east Europe, Horticultural Entomology, The Protection of our Birds, Progress in Horticulture, When and How to Plant, When and How to Prune, The Effects of Frost on Plants, Horticulture and School Sanitation, The Ornamentation of School Property, and Its Permanent Influence upon the Pupils, Distribution and Preservation of Species, Fruits for Farmers' Families, What Experimental Stations can do for Horticulture, What Fruit Trees shall we Plant? All persons attending the meeting will be entertained free of cost at the University.

FLOWERS IN THE SCHOOL GROUNDS.

Mr. Morgan, Inspector, has sent a crate of flowers to Orillia Public School.

Mr. Ellis, gardener, proposes to present fifty packages of flower seeds to the Public School, to give the pupils instructions in planting them, and prizes to the most successful cultivators.—*Orillia Packet*.

PRICES OF APPLES IN ENGLAND.

We learn from Keeling & Hunt, fruit brokers, Monument Buildings, London, E. C., England, that on the 21st of October last the following prices per bbl. were realized: Baldwins, from 12s. to 18s.; a few choice, 21s.; Greenings, from 13s. to 15s.;

Jonathan, from 12s. 6d. to 17s. ; King, from 13s. to 16s. ; Spitzenburg, from 12s. to 17s. 6d. ; Spy, from 14s. to 16s. 6d. ; Vandevere, from 10s. to 11s. 6d.

QUESTION DRAWER.

NEW DISASTERS.

DEAR SIR,—The present year's experience has introduced me to two fresh and unexpected disasters—one connected with plums, and the other with grapes; both, however, being some insect or disease which causes the premature death and removal of the leaves. With the (1) plums this commences before the fruit is ripe, and the destruction was not so complete as altogether to prevent its ripening. Although in two or three cases very few leaves being left, and the fruit at the time quite green, I considered it advisable to remove it rather than endanger the life of the trees. With (2) grapes, the Delaware was the greatest sufferer, while Brant, Rogers' 9 and 15, and Clinton did not altogether escape. Of the Delawares not a single bunch ripened or a single berry ever turned colour out of a crop of between 100 and 200 pounds, and I may also say that there was not a leaf on any of the vines, old, young, or seedlings, long before there was any frost to injure them. I noticed a small, light-colored insect under the leaves, and tried Paris green without effect; afterwards wings grew on these insects, and they infested the vines like a swarm of gnats. I suspect them to be thrip, but don't know. On the plums I saw no insect, but noticed dark spots on the leaves, and they became so brittle that at the slightest touch they fell off the trees. Although my vines and trees were loaded with fruit, overbearing could not have been the cause in either case,

for I had both vines and trees that had never borne fruit affected in the same way.

If you can point out a remedy for these disasters you will confer a favor on

Yours truly,

A. HOOD.

Barrie, 9th Nov., 1885.

REPLY.—(1). Plum trees are very apt to loose their leaves prematurely under the following circumstances:—*(a)* When growing in poor soil, *(b)* when growing in wet or insufficiently drained ground, *(c)* in very dry weather or protracted drouth, and *(d)* if the soil be sandy. The remedies are to plant in a rich, well drained clay soil, and to keep it rich by liberal manuring, and a yearly application of a liberal supply of salt on the surface of the ground, from two quarts to half a bushel, every spring, according to the size of the tree.

(2). Your insect is probably the grape-vine leaf-hopper, *Erythroneura vitis*. They live over winter in the winged state under the dead leaves or such other rubbish as they may find. In the early summer they lay their eggs on the young vine leaves. When the larvæ hatch out they resemble the perfect insect, except that they have no wings. They feed on the young leaves by puncturing them with their sharp proboscis, through which they suck up the juices. The injury appears on the upper surface of the leaf in the form of yellow or brownish spots, which increase in size with the growth of the insects, at length involving the whole leaf, which looks as if scorched, and at length drop from the vine. This work

is continued during the life of the insect, which in its last stages acquires wings and flies from vine to vine. The Delaware and other thin-leaved sorts suffer more from these insects than the leathery-leaved sorts. The remedy is one of prevention, by gathering all the vine leaves in autumn and burning them, and raking the surface frequently and cleaning up all rubbish where they can hibernate. Syringing with tobacco-water, whale oil soap, kerosene emulsion, etc., when the insects are first hatched is recommended, but these are wholly inefficient when they have acquired their wings.

CATALPA SPECIOSA.

My Catalpa has grown nicely, but it has two shoots forming a fork. Would you advise (1) cutting away one or letting it grow as it is? I planted it in a tub with holes bored in the bottom so that I can remove it to its proper place in the spring, knock the staves away, and plant it without injuring the roots: is this (2) a good plan? I have a Bignonia which has grown about three feet since it was planted in the spring: ought I (3) to lay it down and cover it, or does it spring up afresh in the spring, the old vine dying? I like the appearance of the Catalpa; its foliage is fine; and if its bloom is as nice as represented in the *Canadian Horticulturist* and *Rural New-Yorker*, it will be a beautiful tree. At about what (4) age does it begin to bloom?

R. KENNEDY.

Bethany.

REPLY.—(1), Cut away one of the shoots when you plant it out next spring. (2), Yes, your plan is a good one, especially with trees that are dif-

ficult to transplant, but we have found the *Catalpa speciosa*, or Hardy Catalpa, to bear transplanting remarkably well. (3), You would do well to lay your Bignonia down this fall and cover it lightly. It does not die down in autumn and spring up afresh from the root in the spring. (4), The *Catalpa speciosa* often begins to bloom at three and four years old.

FERN FRONDS.

Among some ferns I have just received from Muskoka I found one, a frond of which I enclose to you, all the petioles of which were covered with what appears to be a parasite, but whether vegetable or animal I cannot judge. I shall be greatly obliged for your opinion on the subject, and for any information about it which you may be able to give. I have quite a collection of native varieties gathered from various parts of the Province, but I never saw anything of the nature of a parasite on any specimens before, and the resemblance of the present example to violet or pansy seed is so remarkable as to excite wonder as to its origin.

S. A. C.

Toronto, 23rd Sept., 1885.

REPLY.—That we might have the opinion of an authority in this matter we sent the specimen to a student of Cornell University at Ithaca, N. Y., with the request that he would submit the specimen to the professor of botany. This was done, and the professor stated that the fern was one of the Moonworts, but so very much dried up that he could not identify the species, that the bodies having the appearance of pansy seeds were not parasitic, but sporangia.

It will be remembered that the Moonworts belong to the suborder *Ophioglossaceæ*, the sporangia of which are spiked, and in *Ophioglossum* the coriaceous sporangia are in two ranks on the edges of a simple spike, which in *O. vulgatum* is single and placed on a stalk.

Will you please inform me through the medium of the *Canadian Horticulturist* whether the bulbs of tuberoses and tigridias should be taken up in the fall and preserved in a dry state over winter, or can they be left in the ground?

JOHN KNOWLSON.

Lindsay, Ont.

REPLY.—*Tigridia*.—The plants of this family will not bear the least frost. The bulbs should be taken up in the fall, thoroughly dried, and kept in a dry, frost-proof cellar, securely protected from mice. Plant again in spring, when the ground has become warm. *Tuberose* bulbs should also be kept in a warm, dry place. If they are kept in a temperature below 50° F. the flower germ is apt to decay; and, although the bulb may appear sound outwardly, and send forth an abundance of leaves, it will not flower.

HEATING A VINERY.

I have a cold grapery 30 × 15 feet, in which the grapes have not ripened properly for the last two or three years. Will you oblige me by stating in the *Canadian Horticulturist* the best way of heating it?

Toronto.

W. W. R.

REPLY.—The best method of heating a vinery is by means of hot water in

four-inch pipes, with one foot in length of pipe to every fourteen cubic feet of space, running the pipes under the walk within the house. At page 142 of the *Canadian Fruit, Flower, and Kitchen Gardener* will be found a full description of the simplest mode of heating a vinery, with diagrams illustrating the method.

WHAT THE PEOPLE SAY.

NEW GRAPES.

P. E. BUCKE, OTTAWA.

The past season has fully demonstrated the value of two candidates for public favour in the grape line; and though they are not absolutely new, yet their introduction is of such recent date they have neither of them become so universally disseminated as they deserve to be. I allude to the Brighton and the Amber Queen.

The Brighton was raised by Jacob Moore, of Brighton, New York, and is a fine, strong grower. It gives an exceedingly handsome conical bunch, of moderate compactness, neither too loose nor apt to jam; berries large, of a deep red colour; ripens with Creveling or a little before Concord; has a fine, sprightly, aromatic flavour; flesh tender, with a very slight pulp. It is not a good keeper, as it loses somewhat of its flavour when over-ripe. No collection of grapes is complete without the Brighton, and if only one vine is planted it should be of this variety.

The Amber Queen, which I obtained from Messrs. Stone & Wellington, nurserymen, Toronto, some three years ago, produced a good crop this season. The plant is a vigorous one, and has not been attacked with any disease. The grapes are free from rot and mildew; the berries hang well on the bunch; it is the earliest red grape I have so far

fruited; it has a sweet, rich flavour; berry a little smaller than Brighton, but much larger than Delaware; it is a good keeper. The leaves on the young shoots of this variety have a beautiful golden bronze appearance, and are quite ornamental.

The Delaware is the most sought after by the public of all the red grapes; but it is believed when the Amber Queen and the Brighton come to the front, as they are bound to do, they will take the highest rank both for market and table, their appearance and flavour being of first quality.

GRAPE NOTES.

BY T. C. ROBINSON, OWEN SOUND.

As the vineyard season comes and goes, what sweet spots and streaks are indented on the memory in judging the merits of the multitudinous varieties that so successfully claim our attention! Some of the introductions of recent years are certainly remarkable for their excellence. Among these the one which has attracted the most attention, perhaps, is the

Niagara.—I find it well up to the claims made for it. Season of ripening about with Worden; cluster large, and quite compact without cracking; berry as large as Concord, rather oval, of a fine shade of greenish yellow; and quality very sweet and delicious, though not as rich as some others; while the vine is a remarkably strong grower, very productive, and the foliage is of the healthy *Labrusca* type. Unfortunately, my crop of all varieties was cut short by a late spring frost; but the abundant blossoms showed what the *Niagara* could do. In spite of the strong foxy smell which it develops when kept in the house for some weeks, I would rather grow it for profit than any other variety which I have tested.

Jessica.—I have not yet fruited this, and shall watch the columns of the

Horticulturist with interest for the reports of those who have it in bearing. Some vines that I have have grown well.

Moore's Early.—Perhaps this grape will pay the best of all the black varieties that can be grown for a distant market, provided it is given rich soil. This condition touches its weak point, viz: its lack of vigor in growth. I would not like to call it a *poor* grower, yet it is notably behind Concord and the Rogers' varieties in this respect. Yet we cannot expect to have the great advantages of extra earliness, size, etc., without paying for them in some way. And when the Moore puts so large a measure of its sap into fine clusters of very large, firm, handsome, and well flavored fruit, that ripens along with Champion, we should not grudge a little extra manure and elbow-grease, to enable the vine to stand the strain, and grow enough wood to do it again next year. I find the fruit to be tougher-skinned than either Concord or Worden, and the quality about like Concord.

Lady is another variety which labors under the same defect. If it gets good treatment it ripens about with Moore and Champion, and while the clusters are only of medium size, yet the berries are often as large as Concord. It seems a rather slower grower than Moore's Early, with rich soil and fair cultivation. I think it will be found of great value as the earliest white grape in general cultivation. The fruit is sweet and good, and the foliage, like Moore's Early, is of the hardy, insect-proof and disease-resisting Concord type. The fruit of the *Lady* is too tender-skinned to ship far.

Champion.—What a poser this grape is. How one would like to kick it out for its sourness when first colored, and for its poor quality that is worse than sourness when fully ripe! And yet,

with its extreme earliness, its good-sized berry, and compact (if not good-sized) cluster, its healthful foliage, and great vigor, hardiness and productiveness,—*there it is*,—come to stay, I verily believe! We may *talk* about kicking it out; but as long as men find that with Champion vines they are sure of big grapes and lots of them, so long it will rear its crest triumphant. People will certainly be shy of all black grapes on the fruit stands while the Champion is around, yet most folks who buy would prefer Champion grapes to *no* grapes. So let us as a remedy try to work market quotations into a separate rate for Champion, and then let this irrepressible *Labrusca* have its fling!

I don't succeed with *Pocklington*, or *Prentiss*, or *Lady Washington*. I have them in a sunny spot on very rich soil, but where we neglected proper cultivation. Some other varieties with poorer treatment have done well. Some have utterly failed. So I am not competent to pass an opinion upon these from experience.

Jefferson has been a disappointment. The fruit sent me some years ago, upon its introduction, was the most delicious I remember ever tasting; the foliage is of the healthy native type, and the growth vigorous. But it winter-killed with me, when left exposed, so that I have never grown a cluster: I must experiment further. It proves fully as late as Concord, on the grounds of a friend in town.

It would never do to omit mention of the "old reliable"

Concord.—This has ripened here this season; that is, it has fully *colored*. But was it ripe! The fact is the Concord demands a longer period of sunshiny weather than we usually get in this northern lake region; so that even when it does color you have to lay it down, gently or otherwise,

with the sad conviction that you are eating *Concords* that are not *Concords*. The Concord body there, but the Concord *soul* is hence!

But whatever our *Concords* lack in sweetness, etc., is more than made up in its noble child, the

Worden.—Here we have to the full the thrip-proof, mildew-proof, Concord leaf, almost the Concord vigour of growth, more than Concord size of cluster and berry, a time of ripening close behind Moore's Early, and by far the purest, most delicious flavor of all the Concord family. Indeed, after comparing it with well ripened Eumelan, Early Victor, Delaware, the best of the Rogers varieties, and with well ripened Concord from southern districts, I must confess that, so far as this season's grapes are concerned, I prefer the Worden to any other whatever.

After giving such an unusual opinion (which I hope some of the newer varieties may give me reason to change) perhaps I had better not go on to speak of the Rogers, and other hybrids, at this time.

GREAT STRAWBERRY YIELD.

In looking over the September number, I see Mr. Croil mentions a wonderful yield of strawberries on the "Slipshod System." There is a somewhat similar case in this village, only with far more astonishing results. I can verify the statement as to yield, and I measured the patch myself.

A man put in a patch in his garden Sharpless strawberries in the spring of 1883, one foot apart every way, kept them as clean as he could, but allowed the runners to cover the ground. Last year he raised 75 baskets, and this year 375 baskets! The piece of ground measures 7 yards by 17. He says he has had very little trouble this year with weeds; and no wonder, when I

saw the piece there was no room for weeds. I need not say the soil is splendid. Hitherto I have planted in matted rows, and kept as clean as I could with a good deal of labor; but in future I think I shall try to grow strawberries as this man does. How is it all one's theories are so upset? It is very discouraging to a beginner like myself. Perhaps some experienced strawberry-grower will explain the reasons for this wonderful yield.

I remain, Sir, yours truly,

A. J. WRIGHT.

Lakefield, Ont., Nov. 5, 1885.

[Will Messrs. Little, Hilborn, and Robinson please to explain?]

AN AMATEUR'S FURTHER EXPERIENCE.

To the Editor of the Canadian Horticulturist.

DEAR SIR,—In the number for November, 1884, I gave my views gathered in a small garden in the suburbs of Toronto. I do not know that I have very much more to add, but possibly the little may be of some use to amateur gardeners.

Mr. Croil took exception to the opinion passed by me upon "Bliss' American Wonder Pea," and kindly sent me some seed raised by himself. I sowed them at the same time and side by side with Carter's Little Gem. The "Wonder" was ready a week or ten days ahead of the "Gem," and was more prolific; so I must withdraw the statement in my former letter. My peas were ready to gather two months after they were sown.

I saw in the seed catalogue mention of a new sweet corn, "Ne Plus Ultra." I planted some, and found it very good. It bears plentifully, and although the grains look small, yet they are deeper set than the other varieties. It looks like popcorn in size, but the depth makes the grain more than double the

size. It is very sweet. I still find the "Tom Thumb" very satisfactory.

Carrots and beets have done well. I tried the Hanson lettuce, and found it very satisfactory. Cabbage and cauliflower have both done well, and I have not been troubled by the worm. Tomatoes have been decidedly unsatisfactory. The crop was plentiful enough, but very few ripened. For the last three years I have found it difficult to raise a satisfactory crop, for the reason that the summers have been so cool.

Raspberries were a very abundant crop. I would still recommend the "Guthbert," particularly to the amateur. Mine came through the winter uninjured.

I have dug up my blackberries (Taylor's Prolific). I find the canes are tender and the crop uncertain. They take up too much room, and become a weed. The "Hopkins" blackcap is hardy and productive. I have a seedling of my own which ripens two or three days earlier and is juicier.

Gooseberries ("Downing" and "Smith's Improved") bore heavily, but were attacked by mildew. Have any of your readers seen the new one, "The Triumph?" Is it mildew proof?

Grapes have been a very plentiful crop, but the season has been a very unsatisfactory one. I haven't tasted a grape thoroughly ripe. I have suffered from mildew more than any previous year. Even the Delaware, which has never before suffered with me, was attacked severely. The "Brighton," I may say, was destroyed. Has any one tried the remedy recommended by an Italian grape grower, viz.: "Sprinkle the foliage with a solution of soda—two kilos of soda in one hectolitre of water, or $4\frac{1}{2}$ lbs. of soda dissolved in 26 gallons of water." The remedy is simple if it is only effective. I gave the "Lady" and "Moore's Early" one more chance, and dug them up this

fall. I gathered from the both, after having cultivated them for five years, twelve bunches, and I came to the conclusion that I could do better than that with some other varieties. I am much pleased with the "Vergennes." Mine bore about fifty bunches, fair size. I have put away the greater part of them for the winter, and shall watch with some interest the result, for if they will keep, then it will be well to cultivate them. They ripened fairly well, and since I gathered them they have appeared to ripen more. The Jessica bore a very good crop, and ripened. I notice that if it is allowed to remain too long on the vine it shrivels. The "Purity" also ripened. The great fault with this variety is that the bunch is small. The berry is very firm, of a bright amber colour, and rich flavour, and the vine is a fair grower and bearer. Any one cultivating a few vines I think would be pleased with this kind. The Burnet I have discarded. The Rogers varieties did not mature very well. I am disappointed with the "Massasoit" (Rogers' 3). The bunches are small, irregularly set, and the vine a poor bearer with me.

I was glad to read in the Annual Report that you spoke at Barrie so highly of the "Lindley" (Rogers' 9). I have now grown it seven or eight years, and from the first day it fruited have had a high opinion of it. Its fault is that the bunches are irregular. The Pocklington turned out satisfactory. It has a very handsome appearance, and for that reason people like it. The flavour is not high class, but still it is a reasonably good grape. The Iona did not ripen, nor the Elvira. Notwithstanding the "Elvira" did not ripen, I have a high opinion of it, and think our Canadian cultivators should endeavour to raise seedlings from it. It is healthy, hardy, and an immense

bearer, but a little late; but if the summer had been an usual one it would have ripened. We made jam of the fruit and it went to a jelly, the skins being entirely absorbed into the juice. The colour was rather of a greenish hue, but that could be remedied by adding the juice of some black variety. I have this year planted the "Montefiore" and "Black Elvira" (seedlings of the "Elvira"), and the "Golden Gem" and "Bacchus." I don't know whether they will ripen, but they appear to be highly recommended. All but the Golden Gem appear to be wine grapes, and the Gem should be a wine grape too, as it is a cross of the Delaware and Iona.

Our Canadian fruit growers do not appear to go in for raising seedling grapes, except a few, and those which are raised we hear very little of. I have noticed from time to time for several years past that Mr. Mills, of Hamilton, had some valuable seedlings, but they do not appear to have been offered to the public. What we want is a grape which will ripen in the last week in September, and of a quality superior to the Concord, and at the same time as hardy as that variety. Surely perseverance will produce us such a grape.

Notwithstanding I covered my grapes last winter, three or four were frozen to the ground, and several of my neighbours who did not cover lost all their wood. I think it is absolutely necessary in the vicinity of Toronto to cover every winter; for even if the winter is mild the chances are that the spring will injuriously affect them, and besides, it prevents their budding too early, and they thereby escape the spring frosts.

Several of my peach trees were killed last winter, and I have come to the conclusion that the game is not worth the candle.

I had a very fine crop of plums. The heaviest bearer was the St. Lawrence, a seedling raised by Ellwanger & Barry. It is about the same colour as Smith's Orleans, but I think a little smaller. I admire Pond's seedling the most. I used both Paris green and air-slacked lime, but as the crop was universally good I should like another trial of these remedies before expressing an opinion as to their efficacy.

Cherries did not even blossom. I am afraid they are not a very encouraging fruit to grow.

I think I have now gone over a list of my productions. I might add that my soil is a sand.

I paid a visit to Manitoba last summer. The only wild fruit I saw was the black currant. Some berries were larger than the cultivated. The leaves are different, and do not possess the same aroma. On the wild cherry I noticed the black knot. The wild flowers are very abundant, and some of them very fine. The prairie rose is very sweet, and does not grow higher than about a foot. I saw three colours—white, light, and deep rose. I think many of your readers would be delighted to have it in their gardens. The wild vetch is very pretty, and so is the wild coreopsis. A gentleman who was there at the same time told me he had collected and pressed fifty varieties of wild flowers. I was too late for strawberries, but the plants were to be seen everywhere. I saw the cultivated black, red, and white currant and the raspberry growing, and they appeared to be thriving. From what I saw, there is no reason why the smaller fruits should not be grown there, but there will be greater difficulty in raising the larger fruits.

Yours, etc.,

ALFRED HOSKIN.

Toronto, Nov. 5th, 1885.

GRAPES—A REVIEW.

It has seemed to me that a brief statement of experience with several varieties of grapes might not be uninteresting, to the readers of the *Canadian Horticulturist*. My soil is a sandy loam, the sand predominating, naturally cool and moist, and situate in the County of Lincoln, within the limits of the City of St. Catharines. The climate is modified at this place by the proximity of Lake Ontario, which lies not quite three miles to the northward. The winters are often quite open, usually variable weather with sudden changes from cold to warm and warm to cold. The snow can not be depended upon as a covering in winter, a heavy fall of several inches being often quite melted and gone in two or three days. The thermometer rarely falls to 15° below zero, Fahrenheit, and often does not get much lower than zero during the whole winter. The summers are usually warm and frequently with long periods of dry weather, it not being uncommon to be without rain for four to six weeks. A cool summer, with frequent showers, such as the one just passed, is exceptional. This much by way of explanation of the circumstances under which this experience has been gained which is now given.

Adirondac has proved to be a tender variety, unable to endure our changeable winters. Had it been laid down in the fall and slightly protected, it would probably have survived; as it is, there is not a plant left out of some dozen or more.

Allen's Hybrid is so strongly imbued with the characteristics of the vinifera family that it has proved to be as subject to mildew as any of the European grapes. All of the vines have fallen a prey to mildew.

Agawam (Rogers' No. 15) in favorable seasons, and with long pruning, will ripen well; but in such a season as the

past, in which east winds have been prevalent, the leaves are badly injured by mildew, and the fruit is not only affected by it, but exhibits considerable rot.

Autoinette is a white grape, ripening before the Concord, having some of the flavor and aroma of that grape. It has not suffered from mildew or rot, and seems to have a hardy, vigorous constitution.

Brighton will yet be a very popular grape. The vine is hardy, a strong grower, very productive; the bunches are large; berries medium, maroon colored when fully ripe and covered with a thick bloom; the flesh tender, with very little pulp, sweet, juicy, and very agreeable flavour when first ripe. It ripens early, before the Delaware, and sells readily at good prices.

Burnet has not been a success in my hands. The vine has not been vigorous nor productive, and suffers severely from mildew.

Champion is the poorest in quality of any in my grounds, and yet it is the most hardy, the most productive and the first to ripen.

Clinton, in my estimation, is one of the most desirable grapes we have. In hot seasons it develops sufficient sugar to become an excellent table grape; and in nearly every season is the best of them all, so far as my experience goes, for culinary purposes. Where properly canned it is not to be excelled by any other fruit. For hardness and productiveness it is surpassed by none.

Concord has been more extensively planted for market than any other grape. Its hardness and productiveness, combined with fair quality, have given it great popularity. There are much better grapes in point of flavour, but whether any of those we now have will equal it as a profitable market variety over as large a territory, is as yet a matter of great doubt.

Creveling persists in setting its fruit

very imperfectly. Were it not for this defect it would be a valuable variety, on account of its early ripening and its very agreeable flavor.

Delaware needs no commendation. In soils suited to it, and with judicious cultivation it is not surpassed by any. The vine is perfectly hardy and the fruit is entirely free from rot, at least I have not yet seen any rot in it. The vines require a rich, deep and well drained soil, which must be kept rich, to be pruned short, and the crop well thinned out.

Duchess has mildewed so badly with me that I despair of ever obtaining a good sample of fruit.

Early Dawn is also very subject to mildew, and cannot be relied upon.

Early Victor has not proved to be as early in ripening as I had expected, but nevertheless I think it will be a valuable variety. The vine is very hardy and very healthy, not having shown any signs of mildew, and very productive. The bunches and berries are small, which points are against it as a market grape; nor is it as early as the Champion, but the berries do not drop from the bunch, and are far superior in quality to the Hartford Prolific.

Hartford Prolific, to my taste, is not much better than Champion, and I want none of it.

Iona ripens just a little too late, being in perfection about three seasons out of five. It needs rich soil and good cultivation and a warm exposure. When it does ripen the quality is just "best."

Ives does not ripen as early as the Concord, and is decidedly more foxy.

Jessica has fruited in New Jersey and proved to be a very early ripening variety there also. J. T. Lovett says of it, "Very early and of splendid quality. The fruit is all that can be desired for an early white grape, but

the vine mildews very badly." This season, in which mildew nearly ruined my Rogers Hybrids of every name, the Jessica was not affected.

Lady did not ripen this season as early as I supposed it would. This is the first time that my vines have borne. The bunches and berries are larger than those of Martha, and somewhat less foxy, but quite too foxy to suit my taste.

Linden ripens before the Concord, before the Worden, somewhat smaller in both bunch and berry than either, quality about equal to Concord. The berries do not drop from the bunch, which is handsomely shouldered, and will remain on the vine until frost without deteriorating in flavour. To my taste it is not as good as Moore's Early, but will probably be more profitable as a market grape in northern localities.

Martha is too small and too late in ripening and too foxy when ripe to suit me.

Massasoit ripens as early as Hartford Prolific, and is to my taste a much better grape. The bunches are short, berries large, red and sweet.

Merrimack seems to be less subject to mildew and rot than most of the Rogers Hybrids. The bunches are not large, berries large, black, sweet and "good."

Moore's Early has not been ripe quite as early as the Champion, is much better in quality, being about as good as Concord; the berries are not quite as large as Concord, and when dead ripe drop from the bunch; nor is the vine as productive or vigorous.

Pocklington, after several seasons' trial, has proved to ripen after the Concord. The bunches and berries are large, handsome, and when fully ripe have a decided yellow tinge. In quality as good as the Concord.

Prentiss ripens about with the Con-

cord; bunches and berries of medium size, pale yellow when ripe, with something of the Isabella flavour.

Salem will mildew and rot with me three seasons out of five. When well ripened it is a good keeper.

Vergennes does not ripen any earlier than Concord, or my vine is not true to name. It is not of high quality, but it is agreeable; the flesh is somewhat tough or pulpy. It will keep well.

Wilder is a grape of magnificent appearance, very large in bunch and berry, ripening about with Concord, and of "good" quality. Like all of Rogers' Hybrids it is subject to mildew and rot.

Worden is steadily gaining in favour as a grape for general cultivation in Ontario. The vine is healthy, hardy, productive; bunch and berry about the same in size as Concord, less pulpy, but otherwise having much the same flavor, and ripening about ten days earlier; this difference in time of ripening being more marked in northern Ontario than in the southern portion. The fruit is covered with a rich bloom which gives it a very attractive appearance.

PRUNING ROSES.

I should like to say a few words about pruning roses, bringing out an important principle in regard to it that I have not seen elsewhere mentioned, except in a most incidental manner; and which, experience has taught me, is the very key-note of success in this respect. Every article on the subject that I have read is always emphatic in recommending pruning, and severe pruning. In fact, they say you can hardly prune too much (with a few cautions) and the English *Rosarians' Year Book* (which is, perhaps, the best authority for everything regarding rose culture) gives an article by one of the noted English rosarians, in which he says that he never had as fine flowers

as one year when a donkey accidentally got into his garden, and cropped his rose bushes almost even with the ground. So, full of this idea, I pruned my own accordingly one summer, and the result was, that, on the vigorous canes, the few eyes left burst with such vigor that it took them all summer to finish growing the long shoots, induced by throwing all the vigor of the bush into so few eyes; and on some I had no flowers, on others but a few. I have since learned that this one maxim is without exception: "the stouter the wood, the larger the flower, and *vice versa*." So that it is best to cut off to the ground the canes which are thinnest and weakest, and cut away all wood that has bloomed, leaving only the stoutest canes of the present season's growth. Do this in the autumn early, so that the sun and air may have free access to ripen all the wood you intend to keep, and in the fall bend down and cover these strong branches. When you uncover them in the spring take off only short pieces from the tops of each stalk, the most stout and vigorous should be shortened very little, and see what roses you will have, both for quality and quantity. The hybrid Noisettes—which are perfectly hardy, if bent down and covered—need this caution particularly, for, although they produce no very vigorous canes, like Jacqueminot, still they send up such a number, and each cane produces such a multitude of buds, that often the plant will not open a single one of them; and they decay and drop off in the unopened bud. The remedy for this is to cut out all two year old wood, and all the weakest shoots; and on the varieties given to producing more buds than they can open, it is better not to prune the remaining shoots at all. I have tried this plan with perfect success on some bushes that were very bad cases of this kind of rose trouble. In hybrid

Noisette roses, where the habit is thoroughly remontant, that is, where new shoots are freely produced from the roots, I never leave more than the four best on each bush. In fact, I treat all remontant roses exactly as I treat raspberries, and I am sure that, for this country, if not for every country, it is by far the best plan.

H. S. L.

Vine Lynne, Oct. 21st. 1885.

THE LUCRETIA DEWBERRY.

By referring to the list of subscribers' premiums it will be seen that one of the plants offered is the *Lucretia Dewberry*. It is said that it was found growing in West Virginia. In the *Rural New-Yorker* we find the following testimony in regard to this fruit.

The *Rural New-Yorker* says:—Hitherto we are not aware that the Dewberry (*Rubus Canadensis*) has held any recognized place among cultivated small fruits. Several varieties have been talked of from time to time, but have soon been forgotten.

A few specimens of the Lucretia Dewberry were ordered from Mr. J. T. Lovett, of New Jersey, last May, one of which fruited during the summer. It ripened with Early Harvest, the earliest of all the kinds growing at the Rural Grounds. The berries and drupes are large, and though of good quality when fully ripe, they are rather sour if picked sooner. This may be said of all blackberries; but more especially of this, if judged from its first season of fruiting. The vines are thus far hardy. As, if left to themselves, they would cover too much land, it is a question for others to decide whether it would pay to give them support by trellises or otherwise.

FROM R. G. CHASE & CO.

We have fruited the Lucretia Dewberry this year, and found the fruit to be of good size, perhaps we should

properly say, of large size and good quality. The vine is with us a free grower. For home use we deem it a desirable thing, but it is too soft to ship. It did not suffer any from the severity of the past winter, although it received no special care.

Geneva, N. Y.

FROM WILLIAM PARRY.

The Lucretia Dewberry has been cultivated here two or three years. It is a strong, vigorous grower and hardy. Fruit large, early and of good quality. Its trailing habit renders support of some kind necessary to hold up the vines. The plan we have adopted is to lift the vines occasionally over wire extended along the whole length of the row, supported by stakes driven into the ground about one rod apart. To increase the number of vines, in the latter part of summer and early fall with a trowel set the tips in the ground pointing downward. They send up no suckers. We have planted some hills in the rows of Wilson Junior and other high-bush blackberries, over which they trail nicely, for the purpose of hybridizing or cross fertilizing the blossoms.

Parry, N. J.

FROM PRES. T. T. LYON.

I have now fruited the Lucretia Dewberry three years. Aside from the trailing habit of the class, and the consequent liability of the fruit to become soiled or injured from contact with the earth, I regard it as very desirable, since the fruit is very large—quite as large as that of the Kittatinny Blackberry—and of very good flavor. Besides, it ripens before the early blackberries, nearly or quite as early as the earliest black-caps. With me it has so far been very productive, yielding a fair crop this year, when nearly all the blackberries fail to fruit in consequence of injury from the severe cold of last winter.

South Haven, Mich.

FROM J. S. COLLINS.

The Lucretia Dewberry produces large berries, of good quality and early; but owing to its trailing habit, I do not value it as much as several sorts of blackberries we have; perhaps I do not know how it should be treated to secure the best results.

Moorestown, N. J.

FROM J. T. LOVETT.

I have fruited many Dewberries, such as the Mammoth, Bartles, etc. All bloomed freely but shed their blossoms, proving unproductive and worthless. For this reason the Lucretia Dewberry is a pleasing surprise. I have now fruited it two years, and find it both hardy and productive, and of "mammoth" size in very truth. All who do not plant it will make a mistake. I am yet unable to recommend it for market growing, having fruited it only in my trial grounds.

Little Silver, N. J.

FROM SEC. GEO. W. CAMPBELL.

So far as I have knowledge of the Lucretia Dewberry, my impressions are favourable. I have not fruited it sufficiently to give any personal experience; but I have seen it in bearing and found it enormously productive, and ripening early—July 20th. When fully ripe, I think it is as good as the best blackberry I ever tasted; but as it colors some little time before it is ripe, and while it is still too sour to be good, that might be an objection. In size I thought it averaged larger than any blackberry I had ever seen. Its trailing habit might or might not be an objection in cultivation. It runs along nearly recumbent, the weight of its fruit causing much of it to lie upon the ground, and requiring some kind of mulch upon the surface to keep it clean. As grown in Miami County in this State, it seems to be very successful, and is certainly very large, very pro-

ductive and very good. I can see no reason why it should not be a good and profitable fruit for general use, unless its trailing habit of growth should be objectionable.

Delaware, Ohio.

FROM J. H. HALE.

The common wild Dewberry has always been to me the most delicious of all the blackberry family, and in the hopes of finding one worth cultivation, I have bought, for testing, every new sort that has been offered for some years past; but the *Lucretia* is the first and only one that has ever given promise of being valuable, not only as a delicious family berry, but also for market, especially here in New England where the valuable early market varieties are not hardy enough to stand our winters. The trailing habit of the *Lucretia* renders it a very easy plant to protect through the winter, as it is not quite hardy here. It is wonderfully prolific of extremely large berries, of jet black color, rather soft for a blackberry and in quality far superior to any other cultivated blackberry or dewberry I have ever tested. I have lots of faith in it, but it has not been tested long enough here in the East to warrant any one planting it very extensively till we know more about it. Two or three other sorts having been sent out as *Lucretia* for a year or two past, I fear that the opinions in regard to it will be likely to be rather mixed for a few years to come.

South Glastonbury, Conn.

KEEPING GRAPES.

A lady who has for several years kept a considerable quantity of grapes through the winter, makes the following note in reference to it:—

Grapes should be picked and allowed to stand three or four days, then sorted and put into small-sized or eight-quart

baskets, and hung up in a cool, dry cellar. Thin-skinned varieties, such as Brighton, Concord, and Rogers' 44, or Herbert, should be eaten before Christmas. Rogers' 4, 9, and 15, respectively Wilder, Lindley, and Agawam, and also Salem, are all good keepers. Wilder, Agawam, and Salem we ate the last of May, in 1884.—*Nick's Magazine*.

SLANTING GRAPE TRELLIS.

FROM PETER FULLER, MANAGER MOLSONS' BANK, MEAFORD.

We had most beautiful grapes this fall, Rogers' 3 and 4, the best I have ever grown, but only good and thoroughly ripe on my low trellises.

Where the land can be spared for it, I am sure this is the best plan: Drive some cedar stakes along the back of the vines, and nail on a scantling; set some posts, three feet high, about eleven feet back to the north, and board it up; nail some strips from the scantling to top of the boarding, on which train your wood. I never have to lay my vines down at all, and they never suffer in the winter.

Have any other of our readers tried this inclined trellis?

SEED POTATOES.

Shall we plant our potatoes whole or cut them into pieces as our fathers did? That's the question. Doctor Sturtevant has been trying some experiments at the New York Agricultural Experiment Station and sums up the results as follows:—It would seem from these data that even on very fertile soil, the stored nutriment in the potato tuber furnishes a more congenial food for the growing plant than fertilizing elements contained in the soil; and that upon poor soils at least, an advantage may be gained by planting whole tubers or large sections.

A writer in the *Farm and Garden* says:—Even experienced potato growers would hardly recognize the Early Ohio potato in our patch. The plants of this very dwarf sort, which were grown from whole potatoes, are so unusually large and dark-colored that they might be mistaken for a late, tall-growing variety. The patch promises a very large yield.

The difference in color of plants grown from whole tubers and from less seed, even from as much as one-half of whole tubers, was very marked, particularly in the early stages of growth. The plants from smaller seedling appeared decidedly yellow, compared with the rich dark-green of the whole potato plantings.

CAUSE OF FAILURE OF AGRICULTURAL COLLEGES.

As we gain experience by the lapse of years, problems apparently insoluble at one time slowly and gradually solve themselves at a later period. Thus in the matter of the success of some and the failure of other agricultural colleges both appeared at the first quite inexplicable. But the truth is gradually becoming apparent that no institution will succeed as an agricultural school of which the president and chief is not something more than a mere successful teacher; he must be an enthusiastic agriculturist. There have been regents and presidents at the head of some of our leading agricultural colleges, who were and are all eminent as teachers, great as pedagogues, with wide literary reputations and renowned in history, theology, politics, and law; but not one of these has succeeded, even in a moderate measure, in making these schools agricultural colleges indeed. In fact several have so erred in their management as to have practically driven agriculture out of the schools where they were chiefs, of which we need not

go far for an example. The lesson taught by these facts then is, that any who, in appointing chiefs of agricultural schools hereafter, choose any but practical and scientific agriculturists, will be sinning against light and knowledge.
—*Rural New-Yorker*.

DECIDUOUS SHRUBS AND VINES.

The *Imperial Cut-leaved Alder* is hardy. The thinness of its top gives the plant an appearance of poverty, however, and the persistent old cones are unsightly.

The wild climbing bittersweet or wax-work, *Celastrus scandens*, is desirable for a rear building or rough object. A very pretty covering for a tree trunk is a mixed festoon of bittersweet and Virginia Creeper. The contrasts in autumn coloring of foliage and berries are striking. The *Virginia Creeper* is still our popular climber. Some individuals do not climb well. Dr. Beall propagated two plants from one parent, but they are quite dissimilar in habits of clinging to a building. The *Japanese Ampelopsis* will probably prove hardy when once established. The *Chinese Wistaria* is not hardy.

The ordinary choke cherry, *Prunus Virginiana*, is one of our most beautiful shrubs; so also is the common flowering dogwood, *Cornus florida*. The flower buds of the dogwood were killed last winter, however.

The smoke tree, *Rhus cotinus*, both the white and purple sorts, are always desirable.

The common wild dwarf sumach, *Rhus copallina*, is one of the very best small shrubs for autumn coloring.

The wild crab, *Pyrus coronaria*, is very attractive when in flower. It should find a place in the shrubbery.

The fringe, *Chionanthus Virginica*, is hardy. The English hawthorn, *Crataegus oxyacantha*, has not been hardy.

Our three lilacs, the common, *Syringa vulgaris*; Persian, *S. Persica*, and the Josikea, *S. Josikua*, are hardy and satisfactory. The latter is to be recommended because it blossoms three or four weeks later than the other sorts.

Tamarix gallica, Tamarisk, was injured last winter. Hitherto it had stood well.

The elaste little *Dentzia gracilis*, with some protection of leaves, is very desirable.

From *Spiraea triloba* we get our most profuse white flowers.

Attempts at *Rhododendron* culture have so far proved unsatisfactory.

Double-flowering Almond was injured last winter.

The Mock Orange, *Philadelphus coronarius*, is always hardy.

The Rose Acacia, *Robinia hispida*, is hardy and very attractive.

The Missouri or Buffalo Currant, *Ribes aureum*, is hardy and popular. It is often sold by nurserymen under the name of *Ribes fragrans*.

The *Japanese Quince* is not hardy.

[We take the above from a bulletin of the Agricultural College of Michigan, dated October, 1885.]

PLANTS FOR LIVING ROOMS.

Many people, both in city and country, keep plants in their rooms, and not a few grow them there from one year's end to the other. Of course, plants do not thrive as well in dwelling-rooms as in green-houses, and a common impression exists that gas is particularly obnoxious to them—that is, gas light. The heat-drying effect of the gas flame no doubt affects plants, but not to the extent that it is supposed to; anyhow not much more than a lamp or stove would. This evil effect may be remedied, to a very great extent, by setting the plants on saucers inverted into others of larger size, and keeping these

large saucers constantly full of water. This will gradually evaporate and keep the air around the plants in a moist condition, sufficient to counteract the evil effects of gas or stove heat. The inverted saucers should be large enough so that the base of the pot in which the plants are growing does not actually stand in the water, although occasionally this is beneficial to the plant, especially when much drainage has been used. Maiden Hair Ferns, Aca-cias, and Primulas do first rate under these circumstances. Also the beautiful-leaved Marantas, if kept warm enough during winter. What really destroys room plants is mismanagement and want of light and air. Few plants will thrive long unless they have both. But where there is plenty of both, almost anything may be made to grow and blossom beautifully. Geraniums, Fuchsias, Begonias, Gloxinias, and Abutilons will all give an abundance of flowers, and what is more, these will not be infested by insects, as Roses and Chrysanthemums would be. If flowers are not an object, we would suggest *Aspidistra lurida variegata*, Marantas, Ferns, the beautiful *Sanseveria metallica*, *Ficus elastica*, *Areca lutescens*, or almost any palm. Even small Agaves look nice, and if kept in rather small pots they will not outgrow your window-sill very soon. Mentioning Agaves reminds us of Cacti. These are the plants just suitable for room-culture; neither gas light nor fire heat will hurt them. In fact, they will not require any heat at all during winter, providing frost is excluded. If flowers are expected from them in spring, they should have plenty of sun during winter, but they will not want any water except once in two weeks. Of course you do not expect these to grow during winter, as this is their season of rest, excepting, however, the Crab Cactus or *Epiphyllums*, which, with good man-

agement, may be had in bloom from October to March. Many persons try to grow Crotons, Azaleas, and Camellias in rooms, but as a general thing the result is failure and destruction of the plants, as these require an abundance of syringing and moisture.—*Farm and Garden.*

HISTORICAL ITEM.

In the last century a vessel came into London docks with yellow fever, and the captain was suffering severely from it, and no one would go near the sufferers. Dr. Fothergill, however, went on board, partly out of compassion and partly from his desire to study a disease which was new to him, and he removed the captain to his own house, and finally succeeded in getting him through the fever. When the captain recovered he inquired from the doctor what he was in his debt, but Fothergill refused to receive any payment. The captain then wished to know how he could compensate him for such kindness, upon which the doctor replied that there was one thing he could do for him if he were making a voyage to the East, and would pass through the Straits of Macassar by Borneo, he should be glad if he would bring him back two barrels full of the earth of Borneo, which the captain promised to do. However, when he reached the spot on his voyage out, he thought of the ridicule he must experience from his crew in so strange an undertaking, and his heart failed him, and he sailed through the Straits without fulfilling his intention. On his return by the same route the same thing happened again through his fear of the scoffs of his crew. However, after he had left the Straits two hundred or possibly three hundred miles behind him, his conscience smote him with his ingratitude and the non-fulfilment of his promise, and he put the ship's head

about, returned to the spot, and filled the barrels with the earth. On his return he sent it to Dr. Fothergill, who had the surface of a piece of ground thoroughly burned, and he then sprinkled the Borneo earth on it, when it is a known fact that there came up all kinds of new and curious plants, said to be one hundred different sorts, some geraniums, and new flowers which have subsequently spread throughout the gardens of England.

AN EVERBEARING BLACK-CAP RASPBERRY—THE EARHART EVERBEARER.

This is a new black-cap raspberry. It differs from all other raspberries by its fruiting qualities. It continues to bear till frost. The old canes commence ripening their berries by the 15th of June; by the 4th of July they are all ripe; then the young canes commence ripening their berries. They bear in clusters from 6 to 18 inches long, which all ripen at one time. It bears as many berries on the old canes as any other berry, and ripens as many berries in July as any other in twelve months. It ripens more berries in August than any other in twelve months, and as many in September as July, August being the best month. They will bear the same season they are set. Hard winters have no effect on the July, August and September crop, because the canes are not there. Dry weather has no effect on them, because they are on the young, sappy cane. New canes continue to come from the ground for a new supply of berries. We have picked as high as 200 ripe berries off one cluster at one time, which made about a pint. This wonderful berry was discovered by Mrs. J. Earhart, in Mason County, Illinois.

[We received the above description from Mr. J. Earhart.—ED.]

ORIGINAL.

The East may boast of orange bloom,
 Of cypress and of laurel,
 And we will boast of yellow broom,
 And of orchards rich and floral.
 Eastern, blooms and foliage fair,
 Are of the rainbow's dapple,
 In England blossom everywhere
 The pear, the plum, the apple.
 Then boast who will
 Of trees in spring array
 We still
 Have blossoms fair as they.

The East may boast of citron tree,
 That yields so fair a flower,
 Of lilac's sweet scent on the lea,
 When freshened by a shower.
 They boast of lemons and of pine,
 We of our mellow cherry,
 They of their spice and juicy wine,
 And we our delicious berry.
 Then boast who will
 Of trees and fruit so gay,
 We still
 Have fruits as sweet as they.

RECENT PUBLICATIONS.

The American Florist is published semi-monthly at Chicago, terms \$1 a year, 16 pages. Devoted to the interests of florists of North America.

The Orchard and Garden, an illustrated monthly journal of horticulture, 16 pages, 50 cents a year, devoted exclusively to the interests of the American orchardist, grape-grower, and gardener. Little Silver, Monmouth Co. New Jersey.

A Treatise on the Evaporation of domestic and foreign fruits, vegetables, &c., by the American Manufacturing Company, Waynesboro, Franklin Co., Pennsylvania.

Popular Gardening for Town and Country. Published monthly, by Ransom, Long & Co., 202 Main Street, Buffalo, N. Y., at 60 cents a year, 16 pages, conducted by Elias A. Long, author of *Ornamental Gardening for Americans*.

Lovett's Guide to Fruit Culture, a descriptive catalogue of small fruit plants and fruit trees, handsomely illustrated. J. S. Lovett, Little Silver, New Jersey.

The Kindergarten, a monthly devoted

to elementary education, published by Selby & Co., Toronto, Ont., at 50 cents a year.

H. S. Anderson's semi-annual catalogue and price list of small fruit plants, fruit trees, &c., for the fall of 1885, Union Springs, Cayuga Co., N. Y.

Transactions of the Massachusetts Horticultural Society for the year 1885, Part I. Robert Manning, Secretary, Boston, Mass.

Address by the Hon. M. P. Wilder, President of the American Pomological Society, at its twentieth session, held at Grand Rapids, Michigan.

Dreer's autumn catalogue of bulbs, plants, &c., for sale by Henry A. Dreer, 714 Chestnut street, Philadelphia, Penn.

Michigan Horticulturist, published monthly by W. H. Burr Publishing Company, Detroit, Michigan, at \$1 a year. Edited by Charles W. Garfield. It is quite enough to mention the name of the editor, every one will know that whatever he does will be done as near perfection as man can do. We congratulate the State of Michigan.

Tenth Annual Report of the Montreal Horticultural Society, 1884. We have been favored with several copies for distribution in Ontario to any who may desire a copy.

Proceedings of the Western New York Horticultural Society, 1885.

Transactions of the Fruit Growers' Association of Nova Scotia, 1885, C. R. H. Starr, Port Williams, Secretary.

The following subscriptions have been received during the month of October:—Paul G. Wickson, Peter Fox, Meusing & Stecher, Herbert W. Buell, Wm. Greig, Norman McLeod, J. H. Stanton, Alex. Gibb, Michael Brown, Thos. Treleaven, J. M. Remington, Robt. Orr, Mrs. Baxter, Geo. Mason, Dr. Macdonald, Dr. Tansly, Dr. Towler, Wm. Robertson, E. R. Talbot, G. L. Whitney, Thos. Jenkins, Hy. Deacon, Robert McIndoo, James McGuire, John Carr, Geo. S. Wason, John C. Gilman, Geo. E. Eby, Jas. Barnum, Ed. Macklin, E. W. Nix, A. Dawson, Revd. Towell, J. A. Watson.

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